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THE JOURNAL

of the

Missouri State Medical Association

The Official Organ of the State Association and Component Societies
Issued Monthly Under Direction of the Publication Committee

PUBLICATION COMMITTEE

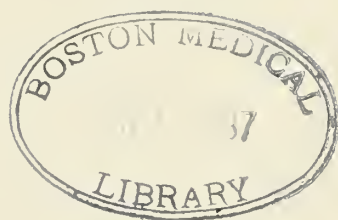
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E. J. GOODWIN, M.D., *Editor*

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E. J. GOODWIN, M.D., Editor
1023 Missouri Building, St. Louis, Mo.
Telephone, Jefferson 5261.

PUBLICATION COMMITTEE { J. C. B. DAVIS, M.D., Chairman
G. WILSE ROBINSON, M.D.
M. A. BLISS, M.D.

SINUS DISEASE

EVAN S. CONNELL, M.D.

KANSAS CITY, MO.

Nasal sinusitis is increasing in our population. The more we congregate in large cities, the more rapidly and thoroughly are upper respiratory tract infections disseminated. Our ideas of the role sinusitis plays in the general well being of the individual are somewhat at variance, and our ideas of treatment are more so.

The sinuses are classified by most writers into an anterior and posterior group; the frontals, anterior ethmoids and maxillaries comprise the former; the posterior ethmoids and sphenoids, the latter. From the pathologic viewpoint sinus disease is classified into catarrhal, purulent and hyperplastic; and etiologically into bacterial, allergic, nutritional and endocrine.

Bacterial invasion produces the purulent type of sinusitis which when neglected frequently becomes hyperplastic in character and sometimes results in polypoid degeneration of the mucosa associated with bone necrosis. The common head cold, influenza and the exanthemata produce most of the bacterial invasions.

Allergic sinusitis has become a favorite field of investigation in recent years and much has been written on this subject. Inhalants, foods and bacteria are the chief excitants.

The characteristic changes in the nasal mucosa consist of a marked edema with infiltration of eosinophils and in later stages of the disease a true hyperplasia in all layers.

Endocrine dysfunction evidently plays some role in certain cases of sinusitis. I have found improvement in a number of instances following the administration of parathyroid and calcium. Nutritional disorders as a cause of sinusitis center about vitamin A. This vitamin is necessary to maintain resistance to bacterial in-

vasion, and no part of our anatomy needs this resistance to infection more than does the respiratory tract.

The symptomatology of sinus disease is varied. Pain and nasal or postnasal discharge are the most constant. However, I wish to emphasize that pain is not always present; many cases of sinus infection have gone unrecognized because the patient was free from pain. Pain when present may be localized over the region of the involved sinus or may radiate to the teeth, eye, ear or neck.

Severe occipital headache is frequently due to infection in the posterior group of sinuses. Postnasal discharge is due to purulent sinusitis almost invariably. The exceptions in my experience have been infected adenoids, malignancy and syphilis. There are many cases of sinusitis without local symptoms. In these cases the existence of sinusitis is discovered only by routine examination in the search for focal infections. In this respect roentgenography is of primary importance.

In regard to the treatment of sinus disease let us first consider the acute cases. With these we have two requirements: viz., the relief of pain and prevention of chronic sinusitis. Relief of pain is accomplished by improving the nasal drainage and the use of heat and drugs. The prevention of chronic sinus disease is accomplished by local treatment of acute nasal infections.

Chronic sinusitis is a very important factor in systemic diseases. Toxins are absorbed by the blood and lymph streams and disseminated to all parts of the body. Is it quite fair to such a patient to say that nothing can be done; that nasal operations are unsatisfactory? Such views are prevalent among lay people and to a great degree among physicians also.

If pus exists in some other part, the surgeon evacuates it. If it exists in a paranasal sinus, why not evacuate it? The surgical principle involved is the same; only the technic differs. My experience has convinced me that a suppurative sinusitis which is causing some breakdown of

the general economy of the individual should be surgically drained.

I am well aware that some contend that the sinuses are not a frequent source of focal infections. In regard to this I quote from an article in the *Journal of the American Medical Association*, June 14, 1930:¹ "In a review of histories of four hundred cases, sinusitis was not a factor in focal infections. Teeth, tonsils, the prostate gland and other foci are of more importance. Suppurative sinusitis may be a focus of infection on rare occasions."

Such has not been my experience. I have found the following complications to be relatively frequent: Arthritis, neuritis, bronch sinusitis, colitis, impaired hearing, vasomotor rhinitis, choroiditis and retinitis. Numerous other conditions have responded to sinus drainage.

In regard to bronch sinusitis, I quote Dr. Deweese:² "In bronch sinusitis we have a co-existing involvement of paranasal sinuses and lower respiratory passages. Most observers have noted that the two conditions show initial involvement at the same time."

"Three types: 1. Soft exudative process co-existing with acute upper respiratory infections.

"2. Bronchiectatic lesion of long duration incident to chronic sinusitis.

"3. Disseminated interstitial fibrosis often with no bronchiectasis, manifesting association with chronic upper respiratory infection. We are emphasizing the necessity of attention to paranasal infection in order to relieve chronic pneumonitis and prevent incurable bronchiectasis."

The technic of the surgical drainage of the sinuses is of interest for the most part to rhinologists only and does not come within the scope of this paper.

Failure to obtain the desired result is due to one or more of the following factors: (1) Incorrect diagnosis; (2) faulty surgical technic; (3) incomplete operations; (4) lack of proper postoperative care; (5) reinfections.

The submucous resection of the nasal septum will not cure a chronically infected sinus and patients subjected to such a procedure for the relief of sinus disease are dissatisfied with the result. We must also bear in mind the fact that the nasal sinuses cannot be removed as we do an appendix or gallbladder, but must remain, except in the radical mutilating type of operation. If the sinus remains it is subject to reinfection, and if such reinfection occurs it is no more the fault of the surgeon than a second attack of pneumonia is the fault of the attending physician. However, if the surgical work has

been properly done, such reinfections are usually controlled by a few simple office treatments.

CONCLUSIONS

Let me say that my experience with sinus infections during the last eighteen years leads me to the following conclusions:

1. Paranasal sinus infections are increasing in our population.

2. Systemic infections are frequently disseminated from the paranasal sinuses.

3. Chronic sinusitis is a preventable disease.

4. Treatment of sinus disease is not the hopeless problem that many would have us believe, and surgery is an important factor in this treatment.

608 Commerce Building.

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IMMUNITY TO HUMAN AND PASSAGE POLIOMYELITIS VIRUS

Simon Flexner, New York (*Journal A. M. A.*, Oct. 8, 1932), reports that the passage of the virus of poliomyelitis through monkeys intensifies its infectivity for these animals and modifies its specific immunologic reactions. The changes undergone are quantitative and probably also qualitative in nature. The modified virus preserves its immunizing power, in part at least, against recent strains of the human virus. Immune sera prepared with human and with monkey passage strains of virus exhibit quantitative differences in cross-neutralizing tests. Virus-serum immunity can be produced in monkeys by the separate, simultaneous injection of one or more doses of virus and immune serum. The dangers of active poliomyelitic symptoms arising in the inoculated animals seem lessened by the combined treatment. The optimum manner of producing virus-serum immunity has still to be determined. Monkeys that were proved to be wholly refractory to nasal instillations of the virus were shown by the author to be devoid of serum antiviral activity and to exhibit average susceptibility to intracerebral inoculation of potent virus.

MASTOID DISEASE

SELDEN SPENCER, M.D.

ST. LOUIS

The subject given to me was mastoiditis (and I assume that I have been asked to speak on acute mastoiditis, but I shall refer to some points in the chronic condition.) In such a body as this we should avoid being elementary but the subject should be discussed from the viewpoint of etiology, diagnosis, indications for operation and with some reference to operative technic. Large books have been written on the subject; it is exhaustive but we shall try not to make it exhausting.

Under etiology we of course have primary and secondary causes. The nature of the infection is an important factor, but even in simple infections the anatomical conditions and irregularities can favor the development of mastoiditis. In most cases of mastoid infection, we find some nasal obstruction present; in children it is usually adenoids and enlarged tonsils; in adults it may be a deflected septum or some pathological condition, such as chronic sinusitis. An eminent rhinologist once said that all people with deflected septums would at some time have trouble with their ears. This may seem an exaggerated statement and it may be a moot question, but we have very often observed that people with deflected septums do have involvement of at least one ear, and that most frequently the ear on the concave side is the one involved. It may seem like a very small thing to mention blowing of the nose as a factor in causing otitis media but the Bible says, "For who hath despised the day of small things?" (Zech. 4:10.) One suffering with a nasal infection can involve the ears by forcing infective material into them or the eustachian tube. This can also be done by improper treatment. Patients should be taught to blow the nose properly and to avoid forcible blowing at all times. Where nose applications are used or advised for home use the patient should be carefully instructed to avoid ear infection.

The nature of the infection cannot be guarded against altogether, especially in these days when we and our children are unwittingly exposed to all sorts of infections. But the resisting powers of patients can be built up and we can to some extent lessen the likelihood of mastoid infection by getting the nose, throat and general condition of our patients in as good condition as possible. The anatomy of the

mastoid process itself is an important factor, but over this we have no control.

It is generally accepted that primary mastoiditis is so rare as to be considered the great exception and when it does occur it is usually traumatic. Mastoiditis then is, generally speaking, secondary to an infection of the tympanic cavity and this in turn is secondary to an infection of the nose or throat. Every acute purulent otitis media is a potential mastoiditis and in our treatment we should endeavor to maintain as good drainage as possible. I do not mean by what I said above that we should undertake any operative work on the nose during an acute attack but that we should correct such conditions in patients as a prophylactic measure. It is not in the province of this paper to discuss the treatment of acute purulent otitis media but it is well for us to remember that over-treatment is often as deleterious as under-treatment. Wet and dry treatment each has its advocates. Where a paracentesis is indicated it should be done early; but let us be very careful not to be too censorious when a case comes to us from other hands. We cannot know exactly what the doctor had to contend with and so many elements enter into the development of a mastoiditis that it does not behoove us to take the holier-than-thou attitude and to insinuate that we should have gotten the case earlier. And now a word as to indications and diagnosis.

Diagnosis.—There is probably some involvement of the mastoid antrum and mastoid cells in every case of acute purulent otitis media, but to make a diagnosis of mastoiditis we must have certain objective symptoms, as the cardinal signs of inflammation, redness, swelling, heat and pain. Tenderness on pressure is usually a definite sign. But we are particularly interested in the probable outcome of a mastoid inflammation and whether or not it is necessary to operate. Probably every otolaryngologist has received an emergency call to come at once to the hospital to examine a mastoid case and he is told that it is urgent. But on arrival he finds that the nurse or intern has been unduly alarmed. Either it is an early mastoid tenderness that clears up under proper treatment, or it is an external otitis. And so it is the indication for operation and its connection with our diagnosis that interests us. It may seem superfluous for me to discuss these elemental things, but in reviewing the subject we may pick up some suggestions.

We all know that early mastoid tenderness yields to palliative measures and such tenderness coming early in a case of simple purulent otitis media is not an alarming symptom, and it

certainly is not an indication for operation. But tenderness coming after an ear has been running for a week or two is invariably ominous. We must also remember that tenderness is not a *sine qua non* in making our diagnosis.

Mastoids often take unusual courses and do unexpected things. We recently had a well developed mastoid in an ear that never had run. A brief history will suffice:

Child of four came to the office with the history that the ear had been bothering her for nearly three weeks. A paracentesis had been performed at that time and the ear did not run. Relief was afforded for a few days. A week later the child was taken to the Barnes clinic and here another paracentesis was done, the doctor telling the mother that the eardrum was bulging. The mother says that even this did not bring on any discharge and the child complained of its ear daily.

At the first visit to our office there was marked mastoid swelling, even edema, and some sagging of the canal wall. The drum membrane was not bulging but was cloudy and the landmarks were not easily discerned. The mastoid was opened next day, a well developed purulent mastoiditis was found, and the pus had broken through the cortex. Recovery has been uneventful.

There is one important occurrence which must not be overlooked and that is the possibility of confusing an external otitis with a mastoiditis, either where there is no otitis media or where an external otitis is superimposed on a middle ear condition. I have seen several cases that were really quite confusing. The roentgen ray is of help but it is not always the last word.

I recall in the early days of our clinic at Washington University a case of acute otitis externa which so simulated a mastoiditis with marked swelling and edema over the process, that eventually the mastoid operation was performed and to our chagrin we found conditions normal. This might seem inexcusable, but the case was seen by several men who have since become our most prominent otologists. I recall reporting this case but have been unable to find the paper among my files.

Our indications for operation are clear in classic cases with tenderness coming on late in an acute running ear. We must not fail to mention cases of well developed mastoiditis with the symptoms almost lacking or far from clear. Dr. Dench, of New York, has gone so far as to say that a mastoid operation is justified in cases of acute otitis media where the discharge persists after six weeks. We might hesitate to open a mastoid when everything was going nicely except that the ear has continued to discharge, and we have seen cases where the discharge from the ear has persisted for some time but eventually cleared entirely. But we must consider the

hearing and while I would not want to say that all acute ears that run longer than six weeks should be opened posteriorly, I do feel that in persistent cases we should keep the matter carefully under consideration. Recently we had a case of this sort with the symptoms quite questionable and only a slight tenderness over the tip. The roentgen ray showed some cloudiness and the mastoid was opened; the tip was quite full of pus and the cells were broken down. In doubtful cases, a blurring of the tip on palpation is a great help in making or confirming the diagnosis.

While we are here discussing the simple mastoid I must say a word about the indications in a radical mastoid operation. We never use a simple mastoid in chronic cases, for where such an extensive operation is indicated we deem it inadvisable to stop short of the radical. Sometimes a compromise operation between a simple and a radical mastoid has been advised to conserve the hearing. For this purpose we leave intact as far as possible the drum membrane and ossicles though removing the posterior wall of the canal.

The Radical Mastoid.—The indications for the radical may be divided into the positive and the prophylactic. The positive indications are the presence of threatening symptoms of intracranial complications. The prophylactic indications may be divided into the absolute or imperative, and the expedient. The absolute indications are those that show the operation is positively required for prophylactic reasons; for example, where there is present an old fistula, or a sequestrum of great extent, or large masses of cholesteatoma persistently recur. The expedient indications may be defined as being those wherein, after reasonable trial, all palliative methods have failed and the operation seems expedient to arrest the further course of the disease. Indeed, the subject does not admit of any general rule. It requires careful, conscientious thought as to what are the patient's best interests.

A thorough knowledge of the anatomy of the part to be operated upon is ever essential to the surgeon. It is just as necessary to know what to avoid as to know what to attack. This is peculiarly true of the aural surgeon. He must be familiar with the location of all the important structures in and around the temporal bone. Furthermore, he must be well acquainted with certain bony landmarks which will give him valuable hints as to the location of such deep structures as he may wish to meet or avoid.

It is not my intention to describe the technic of the mastoid operation. However, there are

one or two points which it will be necessary to notice. There are important anatomical structures that deserve special attention and there are certain external landmarks that bear a relation to them. The major points that we are now to consider are, the antrum, the sigmoid sinus, the horizontal semicircular canal, the facial nerve and the interior of the cranial cavity. Primarily it is the antrum that we seek and to which we wish to obtain entrance. At one time this was considered unnecessary and by some even inadvisable in an acute mastoiditis; but we believe now that it is essential to reach the antrum if possible and to secure free drainage.

Other cells in the mastoid process may be lacking but the antrum is always constant and the first object in any of the mastoid operations should be to reach the antrum and then to enlarge the opening thus made. The facial nerve is to be avoided as is also the sigmoid sinus, the cranial cavity and the semicircular canals, excepting, of course, where any of these parts are themselves involved and we seek to expose them as, for example, in thrombosis of the sinus or brain abscess. Where there has been a great deal of destruction of tissue, any or all of these parts may have become affected and it may be necessary to expose them in removing diseased bone, but care must be taken not to injure them. Even though accidental opening of the sigmoid sinus may not be a serious thing we would all rather avoid doing it.

This discussion is not limited to any particular operation. Whether, therefore, one wishes to make the simple opening into the antrum or to open the entire cavity into one, these bony landmarks will be of great value in guiding this work, and also in the method of procedure inasmuch as the so-called radical operation is a working out and enlarging of the simpler operation.

The position of the initial incision into the soft parts first demands attention and is a matter of no small importance. The proper location of it will enable us to better view the superficial bony field and thus more easily locate our bony landmarks.

A great many aural surgeons advise making this cut in the soft parts parallel to the posterior auricular groove at the distance of about one half an inch behind it. It is preferable, however, to make the incision in or as near to this groove as possible; if this incision is inadequate, another incision may be made at right angles to it at a point on a level with the base of the mastoid. The incision made in the posterior auricular groove not only leaves less scar than an

incision posterior to it, but enables us to see more distinctly those landmarks that constitute our guides.

The posterior and posterior-superior walls of the outer bony orifice of the external auditory meatus should then be entirely exposed, as the tip of the mastoid and the entire mastoid region must be laid bare. This bony surface thus exposed should be carefully examined and the linea temporalis, spina suprameatus, or spine of Henle, and the line of attachment of the sternocleidomastoid muscle be located. The surface that is surrounded by these points, and an imaginary line parallel to Henle's spine, is the planum mastoideum, and in the anterior portion of this plane we begin our opening which is to be directed toward the antrum. In adults the work on the bone is to be done with a gouge, or chisel and mallet, and the direction of the external auditory meatus downward, forward and inward is to be followed. In opening the antrum of children under two years old the curette may be used.

The question of the depth of the antrum is a most important one and merits careful consideration. The depth is not uniform but varies according to the age and individuality. In infants of one year and even older the antrum has scarcely any depth and can be easily penetrated with a knife or curette. Authorities differ widely as to the maximum depth of the antrum. In an article by Dr. Philip D. Kerrison, of New York, entitled "The Limits of Variation in the Depth of the Mastoid Antrum," authorities are quoted as giving the following maximum depth: Gruber, 15 mm.; Politzer, 15 mm.; Buck, $\frac{3}{4}$ inch; Dench, $\frac{7}{8}$ inch; Schwartz, 25 mm., and Broca, 29 mm.

In my experience I have never found a depth of more than $\frac{5}{8}$ of an inch. As well as can be judged from the living subject and by measuring twenty temporal bones from cadavers in Dr. Terry's collection the greatest depth found was less than $\frac{3}{4}$ of an inch. Dr. Kerrison in his article shows a relation between the depth of the antrum and the posterosuperior canal wall and states that "the depth of the antrum is always less by actual measurement than the posterosuperior canal wall." I have since made measurements on my dry specimens and find that they support the accuracy of this rule.

We thus have a guide to the depth of the antrum and to its position in relation to some of the bony landmarks that we have already mentioned, for it is always situated below the supramastoid ridge, above and in front of the squamomastoid suture and behind the spine of Henle.

The supramastoid ridge is of further importance as it is almost always situated a little below the floor of the middle fossa of the cranium, sometimes at a level, but very rarely above it. Hence, in attacking the bone below this line one is very unlikely to enter the cranial cavity accidentally and most likely to enter the antrum by following the direction mentioned. This ridge is usually distinct, but it may be indefinite and in children this is often the case.

The spine of Henle is of importance in locating the antrum, for the opening should be made at a point just a trifle behind it; and it is of further importance in giving us at least a warning as to the location of the sinus. If the spine of Henle is situated very high it is a probable indication that the sinus is located unfavorably and rather far forward and also that the cranial cavity is rather low. For example, should an imaginary line be passed through the spine parallel to a similar line through the supramastoid ridge, its distance from that line being equal to its distance from a line passing through the squamomastoid suture, this would indicate a favorable location of the sinus and cranial fossa; but as that line approached the line of the supramastoid ridge, we should be warned of danger and expect to find the sinus forward and the cranial cavity low. The value of this observation relative to the position of the sinus is only suggestive. In a series of fifty temporal bones examined, I found this rule was applicable in about half the cases only. It is by no means a rule of unvarying application.

The shape of the skull will also aid in judging of the location of the sinus. In long skulls it will be more posterior, while in short broad skulls it will reach farther forward and be more dangerously located. Also, in broad skulls the middle fossa is more likely to be opened. Usually, the sinus is more anterior on the left side than on the right, but the difference is not significant.

The facial nerve is not likely to be wounded in doing the simple operation, but in doing the radical operation great care must be taken in removing "the bridge." The chisel should be driven at a very obtuse angle and only small flakes at a time should be removed.

By paying careful attention to the details in these operations the danger of serious accident will be thereby much reduced.

In drawing this paper to a close it is appropriate to say a word about the after-treatment of the simple mastoid operation. The old idea of packing with gauze has been pretty generally discarded. A piece of rubber tubing cut spirally with a strip of salvaged gauze in it placed in the lower part of the wound will afford sufficient

drainage and the wound may be closed either with clips or by sewing to the point where the drain is placed. This can usually be removed at the first dressing and we usually attain a scar that is almost imperceptible when complete healing has taken place.

718 University Club Building.

INFECTIVE SINUS THROMBOSIS

W. E. SAUER, M.D.

ST. LOUIS

Thrombosis of the lateral sinus is the most frequent of the aural intracranial complications. This is easily understood when we consider the intimate anatomic relationship of the lateral sinus, especially the sigmoid portion, to the middle ear or mastoid cells.

The extension of an infection in the mastoid to the lateral sinus is direct, that is, by continuity of tissue. Occasionally the sinus may become infected from the middle ear without the mastoid cells breaking down, the infection having spread through the small emissary veins of the temporal bone. Sometimes the jugular bulb becomes infected directly from the middle ear. Rarely we find a septic thrombus in the lateral sinus without any demonstrable lesion in the middle ear or mastoid. I reported a case in 1910 in which there was no history of middle ear involvement or any evidence of mastoid disease discernible. At the time of operation, when the sigmoid groove was opened, an extradural abscess was found and pus was also coming from an opening in the sinus itself. The source of this infection was never determined.

Direct extension from the mastoid to the wall of the sinus by necrosis of some part of the sigmoid groove with the formation of an extradural abscess is the most common route. The pathologic process following infection of the dura by contact with diseased bone is similar to that in any exudative inflammation. The small blood vessels first become engorged, followed by a transudation of serum and the invasion of adjacent tissue by leukocytes from the veins; a proliferation of new cells takes place with a necrosis of the endothelial cells and the formation of granulation tissue. If the diseased bone is removed before the sinus wall is penetrated by the infection, there may still be a return to the normal; if not so removed the lesion may progress and lead to a softening and necrosis of the vessel wall. When the intima of the vessel is reached, a roughening takes place and the

Read in the Symposium on Diseases of the Ear, Nose and Throat at the 75th Annual Meeting of the Missouri State Medical Association, Jefferson City, May 23-26, 1932.

blood stream slows up at this point with a clot formation. This clot may completely occlude the sinus or only partially so; if the latter it is called a mural thrombus. If undisturbed, the thrombosis may extend down into the jugular vein and as far back as the torcular Herophili. The infective organism invades this clot and eventually there is a breaking down with a gradual disintegration. Infective material enters the blood stream resulting in the clinical picture of a blood stream infection.

The symptoms of sinus thrombosis will depend on the stage of development of the clot within the sinus. During the first stages, as long as the clot remains attached to the vessel wall without any portion of it being thrown into the circulation, there are no clinical manifestations. When the clot begins to disintegrate and septic matter enters the general circulation there is usually a severe chill, at least a chilly feeling, with a sudden rise in temperature to 105 F. or more, followed by profuse sweating and the temperature drops to normal or below. The pulse rate is increased, the face is flushed and the patient gives the appearance of being very ill. He may complain of headache but this is not a constant symptom. The sensorium is clear and remains so during the course of the disease unless other intracranial complications are present. The temperature may remain normal for from 24 to 48 hours, then the patient has another chill with high fever and sweat. Usually there is a daily chill with fever. During the fever-free period, the patient is comparatively well and comfortable. This interval of comfort and well being is considered one of the characteristic features of the disease. As the disease progresses there is a progressive loss of flesh and strength with a characteristic septic appearance.

The blood findings in infective sinus thrombosis is about the same as in other suppurative lesions. There is usually a gradual increase in the number of white cells. At one time great importance was attached to a relatively high polymorphonuclear count. That a low leukocyte count does not mean a septic thrombus is absent was proved in one of my own cases in which a high intermittent fever followed a mastoid operation and a thrombosis was suspected but, inasmuch as the white blood count was never over 7000, the consulting internist and neurologist decided that a septic thrombosis could not be present with so low a white count. Operation was, therefore, deferred for about a week when an extensive thrombosis was found extending back to the torcular and down into the chest. The patient died of general sepsis.

Blood cultures when positive are also of

value, but even their importance was for a time greatly overestimated. According to Libman and others, the presence of bacteria in the blood in the course of a suppurative otitis media is sufficient evidence of a septic thrombosis in the lateral sinus to warrant operation; also, if streptococci are found in the blood the first day after operation on the sinus, it is a definite indication that the jugular vein itself is involved and demands immediate operative relief. The fact, however, remains that bacteria may be found in the blood in cases of septic endocarditis, pneumonia, meningitis and severe tonsillar infections. According to Duel and Wright, positive blood cultures have been obtained in uncomplicated cases of suppurative mastoiditis. Negative blood cultures do not, on the other hand, prove that a sinus thrombosis does not exist. Oftentimes, due to faulty technic, a negative culture is obtained when bacteria are present in the blood. I have had three cases recently in which several negative cultures were reported by one bacteriologist, but the blood given to another bacteriologist showed many colonies of hemolytic streptococci. Sometimes a noninfected clot below an infected thrombus prevents the bacteria from entering the blood stream, thus accounting for a negative culture.

Physical signs are often absent. In some cases there may be tenderness on pressure over the mastoid emissary vein. This, however, may also be present in an extensive involvement of the postsinus cells in a large mastoid without lateral sinus involvement. A tender and cord-like feeling of the internal jugular, especially along its upper portion, is given as a diagnostic sign but is of rare occurrence.

Optic neuritis occurs in about 25 per cent of the cases. According to Eagleton, papilledema is more frequent in sinus thrombosis than in cerebellar or cerebral abscess. The monometric test for sinus thrombosis brought out by Ayer and Tobey, known as Queckenstedt's test for spinal subarachnoid block, is of value when the sinus is completely blocked. It is also of value in determining which sinus is involved in a case of double mastoiditis when a sinus thrombosis is suspected.

Many cases of sinus thrombosis do not present clear and well defined symptoms. The diagnosis is often made only after a mastoid operation has been done and the sinus exposed; even then it is at times impossible to determine whether a thrombus is present or not. The macroscopic changes in the sinus wall may show considerable thickening with the surrounding dura covered with granulations and yet the intima of the sinus be intact with no clot of any kind. When the sinus is collapsed and there is

definite evidence of necrosis of the vessel wall we can conclude that there is a thrombus and the sinus should be opened. There are, however, instances in which we find a thrombus in the sinus when the vessel wall appears thinner than normal, giving an appearance of an atrophic change in the vessel. This is brought about by a blocking of the small vessels from which the sinus receives its own blood supply.

A thrombosis of the lateral sinus should be suspected after a mastoid operation if, in spite of the free drainage from the middle ear and mastoid, the temperature elevations continue and become higher each day with the usual remission to normal or below. This is especially true if there has been an interval of several days or more of normal temperature. All other possible sources of the fever must be eliminated; e. g., pneumonia, typhoid fever, erysipelas, malaria, meningitis, rheumatoid arthritis, acute tuberculosis, pyelitis and otitis media in the other ear, especially in children. I saw a case in consultation in which all arrangements had been made for opening the sinus and ligating the jugular, when a bulging drum in the opposite ear was discovered. A free incision of the drum membrane saved the patient from a lateral sinus operation. Erysipelas, not necessarily involving an area about the mastoid wound but involving some other portion of the body may be the cause of the temperature remission. I had one case in which a patient developed an erysipelas of the breast following the mastoid operation. We thought this accounted for the chills and fever, but in spite of the fact that the skin lesion cleared up the fever and chills continued. We decided to operate on the sinus. A septic thrombus was found. Complete recovery followed the removal of the thrombus and the ligation of the jugular vein.

Another case of interest was that of a girl of 17 who was brought into the hospital with a diagnosis of typhoid fever. A discharging ear was noticed by the nurse in charge. The patient was distinctly septic and the history revealed that the ear had been discharging for over two months. Considerable mastoid involvement with an extensive thrombosis of the sinus were found at the operation. After a rather stormy period the patient made a complete recovery.

A patient with daily chills and fever which did not yield to quinine after ten days of treatment was referred to Dr. M. A. Bliss who detected a tenderness along the course of the right internal jugular. He referred the patient to me for an otologic examination. The patient could not recall ever having had any ear trouble. Both drum membranes were normal and no mastoid tenderness could be elicited. The eye findings were negative. The temperature was 105 F.

When seen the next day at noon the temperature was normal and the patient was enjoying a Sunday dinner. That afternoon he had a severe chill followed by a temperature of 105 F. with a profuse sweat. In spite of the negative findings we decided to open the mastoid. The mastoid showed no evidence of disease but on opening the sigmoid groove there was a gush of pus under pressure. The dura was found covered with granulations for quite an area. There was also an opening in the lateral sinus wall itself from which pus was discharging. The jugular was ligated and the sinus was freely opened; no bleeding was obtained from the torcular end of the sinus nor from the jugular bulb below. The patient continued to run a septic course for a week when the fever gradually subsided followed by complete recovery.

In a recent case, a boy of 5, the fever continued high for two weeks after operation. A positive blood culture of a hemolytic streptococcus was obtained 10 days after a ligation of the jugular. Nothing further was done. The patient made a complete recovery.

The course of the disease is progressive after a septic thrombus has formed in the sinus. The loss of strength and vitality becomes more evident and the feeling of well being during the fever-free period becomes gradually less marked as the patient becomes more septic. Metastatic abscesses may form in various parts of the body and death result from a general pyemia. In other cases, death may result quickly from metastasis in the vital organs. Lung abscess is a frequent complication.

The prognosis of infective sinus thrombosis, unless relieved by operation, is very unfavorable, even though there are cases on record which have recovered without operation. The results of the operative treatment are very satisfactory in the early stages; practically all the cases get well. In the later stages, when the clot begins to disintegrate, the results are not so satisfactory. Only about one half of the cases recover. When there are secondary abscesses in the lung or brain the prognosis is very bad.

The treatment is purely surgical. When there is an extradural abscess present and the dura covered with granulations these should be uncovered until healthy dura is reached. The lateral sinus is now freely exposed and, if we are satisfied that the interior of the sinus is infected, the sinus itself should be freely opened. The question as to whether the jugular vein should be ligated or resected in every case is debatable. Some operators feel that the best practice is to ligate the jugular vein before manipulating or opening the sinus. Others believe that the opening of the sinus and securing

free drainage with the removal of the source of the infection in the mastoid is all that is required, while others are more radical and resect the vein. Personally, I have always felt that the ligation of the vein offered the patient the best chance for recovery. The question as to whether the thrombus should be removed from the sinus or left in place, is also unsettled. There are a number of experienced operators who believe that after the vein is ligated the thrombus should be removed with a curette or by suction and free bleeding secured from both the torcular end and from the jugular bulb. In a number of my own cases I was unable to secure a bleeding and yet the patients went on to recovery.

The value of properly typed blood transfusion cannot be overestimated, not only in bolstering up the patient after operation but also in combating the bacteriemia.

128 Beaumont Building.

THYMIC DEATHS

HARRY M. GILKEY, M.D.

KANSAS CITY, MO.

The tragic suddenness of thymic deaths leaves a deep impression upon all concerned in the case, particularly when death follows some trivial operation such as circumcision, tonsillectomy, etc. The thymus is an organ of great interest to the anatomist, physiologist and morphologist although none are more vitally concerned than the practitioner.

It is strikingly significant that the thymus occurs in the higher vertebrae, reaches its maximum size during early life and undergoes retrogressive changes at maturity. One would assume that this organ must have some relation to the functions of growth and development. In spite of the immense amount of energy and labor directed toward the solution of the problems concerned in the anatomy and physiology of the thymus, there has been no uniform agreement by investigators.¹

The thymus in its normal anterior mediastinal location is so situated that it covers the base of the heart and the great vessels and is in intimate anatomic relation with such important nerves as the vagus, phrenic and inferior pharyngeal. Its weight in the new-born is 13 grams. The thymus doubles its birth weight in six months, triples it in six years and thereafter increases only a few grams in average weight until the age of 12 or 13 years. From early fetal life until approximately 10 years of age, all the component parts increase in absolute

weight; then the medulla and the cortex decrease sufficiently to reduce the total thymus weight in spite of an absolute increase in connective tissue and fat. The number of Hassall's² corpuscles, all sizes, increases from the early fetal period to puberty and then decreases. The smaller corpuscles are commonest.

When illness has lasted longer than twenty-four hours the weight of the thymus is reduced regardless of the cause of death, with the exception of tumor of the thymus, leukemia and exophthalmic goiter. The involution is probably part of the general involution of most of the organs found in inanition, but the thymus, like the subcutaneous fat and the lymphoid tissue, reacts markedly and rapidly, so that all three are significantly decreased in most illnesses lasting more than twenty-four hours.

Status lymphaticus may be defined as a constitutional defect, usually congenital (though it may be acquired), dependent on an inadequacy of some function of the suprarenals, sex glands and the autonomic nervous system, and associated with lowered resistance or increased susceptibility to a great variety of nonspecific physical and chemical agents. Anatomically, it is characterized by delayed involution or hyperplasia of the thymus, hypertrophy and hyperplasia of the lymph glands and lymphoid tissue of the various organs, underdevelopment of the chromaffin, gonadal (suprarenal cortex, interstitial cells of the testes and the ovaries) and cardiovascular systems, and certain peculiarities of external configuration.³

Of much greater importance than these occasional deaths is the fact that milder grades of this lymphatic condition are commonly present and cause a weakened constitution that contributes to the ill health of a large number of people, especially infants and children. The blood of these subjects shows a change of white cells, the tendency being for the polymorphonuclears to become fewer and the lymphocytes greater in number. The coagulation time is lengthened, the blood sugar lowered and the alkaline reserve decreased. If such a person contracts a disease or an infection he would not have normal resistance to it; would not have the normal increase in polymorphonuclears; the low blood sugar would tend to exhaustion, and the low alkaline reserve would favor the development of acidosis. Such persons, who in normal condition would probably successfully combat a disease or infection, would frequently succumb. As a matter of fact, it has been found that various grades of status lymphaticus have been present in a large proportion of patients who have died of an infectious disease. Marine quoted Ortnier as

Read in the Symposium on Diseases of the Ear, Nose and Throat at the 75th Annual Meeting of the Missouri State Medical Association, Jefferson City, May 23-26, 1932.



Fig. 1. Recurrent respiratory infection.

having referred to a connection between status lymphaticus and pneumonia.

DIRECT CAUSE OF DEATH IN STATUS LYMPHATICUS

Death from status lymphaticus has been known to be precipitated by slight infections or intoxications, various emotions, psychic shock, electric shock, shock from hypodermics or vaccinations, traumatism, coitus, anesthesia, flogging, cold water, burns, bathing, muscular exertion, hemorrhage or drugs. Some persons whose death has been due to status lymphaticus have had previous experiences that might have been expected to kill them. Coe and Peden reported the sudden death of a child who had a large thymus but who had taken four ether anesthetics without any abnormal reaction. Garland reported that 1564 routine autopsies at the Massachusetts General Hospital showed twenty-three enlarged thymuses. Eleven patients had survived the immediate effects of major operations. One patient only died during operation. Four patients might possibly have died as a result of status lymphaticus although in none of them was such a diagnosis necessary to account for death.

THE ENLARGED THYMUS AS AN INDICATION OF STATUS LYMPHATICUS

There is considerable clinical and autopsy evidence to show that the enlarged thymus does indicate a condition of status lymphaticus in

the majority of cases, but not invariably as there have been a number of cases of death from status lymphaticus in which an enlarged thymus has not been found, and there have been other cases reported of thymic hypertrophy without any other features of the lymphatic constitution.⁴ Furthermore,⁵ there is considerable doubt in many cases whether or not a supposedly enlarged thymus is actually enlarged and, if enlarged, whether it indicates a degree of status lymphaticus that is incompatible with life during an emergency, such as anesthesia.

Kinney and Taylor⁶ after a study of 160 infants within the first twenty-four hours after birth came to the conclusion, as did Bliss,⁷ that there was no normal thymus as to size, shape and density, nor was there any constant relation to the weight or sex of the child. In general, it can be said that the largest thymuses are found in the best nourished infants and children and that the thymus varies considerably in size according to the nutrition of the patient. It is, therefore, difficult or impossible at times to assert that a particular thymus which appears to be enlarged is actually enlarged for that particular individual.

It is no doubt true that in the majority of instances an actually enlarged thymus indicates some degree of status lymphaticus but with such normal variations in size as to prevent one from placing any reliance on the size of the thymus alone for a diagnosis of status lymphaticus. Alteration in size of the thymus may vary with intensity of the condition of status lymphaticus as it is a known fact that the thymus undergoes an acute involution during starvation, acute infections and intoxica-



Fig. 2. Same as figure 1. Relieved with four treatments of roentgen ray.

tions. It also diminishes in size and weight in inanition and in any condition that causes loss of body weight. It is also true that under such conditions as exophthalmic goiter, acromegaly, chlorosis, Addison's disease, it undergoes a rapid increase in size from congestion. It has been observed many times that the thymus becomes smaller during acute illnesses. Hammar states that the thymus is never found in normal condition in a subject who has died of diseases.

THE OCCURRENCE OF ENLARGED THYMUS

Many statistics on the occurrence of enlarged thymus as shown by the roentgen ray can be found in the literature. Mosher, MacMillan and Motley,⁸ in their series of nearly 5000 roentgen examinations of children from two to sixteen years of age, found 7 per cent had an enlarged thymus. In a series of 95 apparently normal new-born infants, Singleton⁹ found that the roentgen films of 35 per cent showed enlarged thymus shadows. Perkins¹⁰ observations at the Seaside Hospital indicated that between the ages of one and seven years, 8.6 per cent of all the children showed mediastinal shadows characteristic of thymic enlargement, and 4.2 per cent showed a shadow larger than normal which warranted a suspicion of enlargement. In his study of 2000 consecutive admissions to the pediatric service of a hospital Greenthol¹¹ found that thymic enlargement was diagnosed in 4.5 per cent. When roentgen studies were made enlargement was

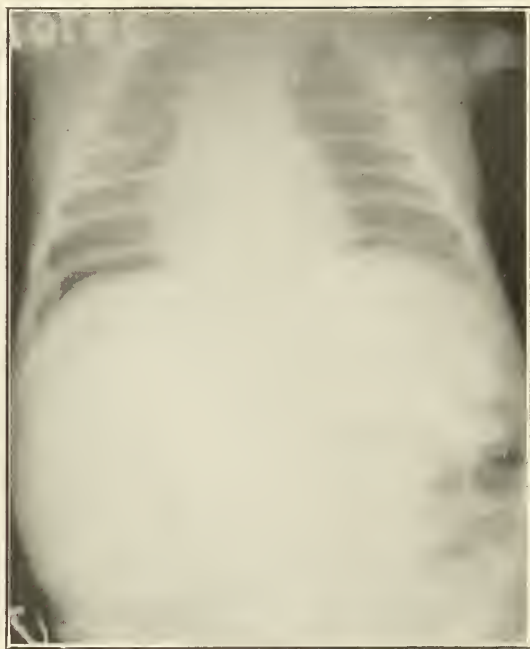


Fig. 4. Same as figure 3. Symptoms relieved by roentgen ray treatment.

noted in 25.6 per cent. Liss¹² found that 42 per cent of 119 patients showed thymic enlargement at birth. Many statistics such as these tend to show that the greatest percentage of enlargement of the thymus is found in the youngest group of patients.

ROENTGENOGRAPHY OF THE THYMUS GLAND

Roentgenography of the thymus brings up the question of whether or not the roentgenogram gives a true picture of the size of the gland. In the hands of many roentgenologists it does not. Pancoast¹³ has stressed the importance of lateral views, both in the inspiratory and in the expiratory phase, but he has not taken into consideration the effect of the systole and diastole of the heart on the size of the thymic shadow. Ideas of the value of the roentgen ray in detecting the size of the thymus must soon undergo a radical change because of the work now being done by Hasley and deTomasi¹⁴ at the university hospital, Ann Arbor, Michigan.

In a preliminary report, published about a year and a half ago, on the cin-ex camera studies of the thymus in infants and children, Hasley and deTomasi showed the futility of the ordinary roentgenogram to indicate whether or not a thymus is enlarged. With their apparatus it was possible to make as many as four roentgen exposures on a film in one second, the average for their studies of the thymus being about five exposures in two seconds. These roll films are about 20 feet in length, permitting a record of thirty roentgeno-

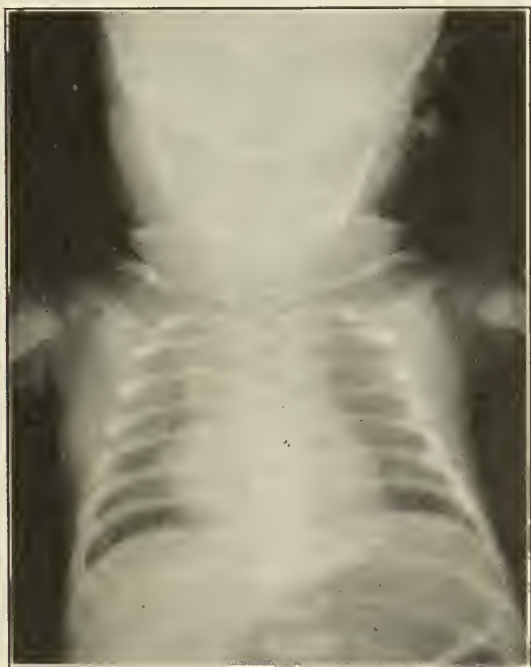


Fig. 3. Enlarged thymus in baby 20 days old.

grams in from ten to twenty seconds. The authors state that the thymus shadows as shown on them, two or three roentgen films cannot be accepted as indicating the true state of enlargement and, conversely, that a set of films after a single or a series of therapeutic exposures, though the thymus then appears smaller, does not necessarily indicate that the gland has been reduced.

The two main factors that tend to give discrepancies in the ordinary roentgenogram have been eliminated by the cin-ex camera studies. These are the respiratory and the heart mechanisms. As Hasley stated, "The diastole, the systole, the gorgement at one time of the heart, the partial constriction at another time, the change in the size of the pulmonary artery, aorta, inferior and superior venae cavae, all exert different pressure changes on the thymus gland." Superimposed on this is the movement of the thoracic cage in respiration. These investigators showed that a single roentgenogram taken from a roll of the film with the heart in diastole, would appear to show an enlarged thymus, while another one, with the heart in systole, would show no evidence of thymic enlargement. They stated that the demonstration of any films termed before and after roentgen treatment, unless they represent identically the same phase in the cardiac and respiratory cycle, have no significance whatsoever. In the light of the knowledge gained from this new method of roentgen study, it would seem that one is now forced to abandon some of the generally accepted conclusions regarding the size of the thymus that have been indicated by the ordinary roentgenograms. This means also that the many statistics on the evidence of enlargement of thymus in infants and children have little or no value, and this appears to apply also to the apparent reduction in size of the thymus following roentgen therapy.

ROENTGEN THERAPY OF THE THYMUS GLAND

In the minds of many, roentgen treatment for apparently enlarged¹⁵ thymic glands is unjustified, for the reason that the enlarged thymus is only a symptom of status lymphaticus, as is also the hypertrophied lymphoid tissue elsewhere in the body, and it seems, therefore, no more rational to apply roentgen therapy to the thymus than it would be to treat enlarged lymphatic glands.¹⁶

Recently an acceptable theory was proposed by Aldrich¹⁷ to explain the apparent benefit many patients derive from roentgen therapy of the thymus. This theory has as its basis the development of vagotonia resulting from an insufficiency of the suprarenal hormones.

Aldrich explained that the vagus is a part of

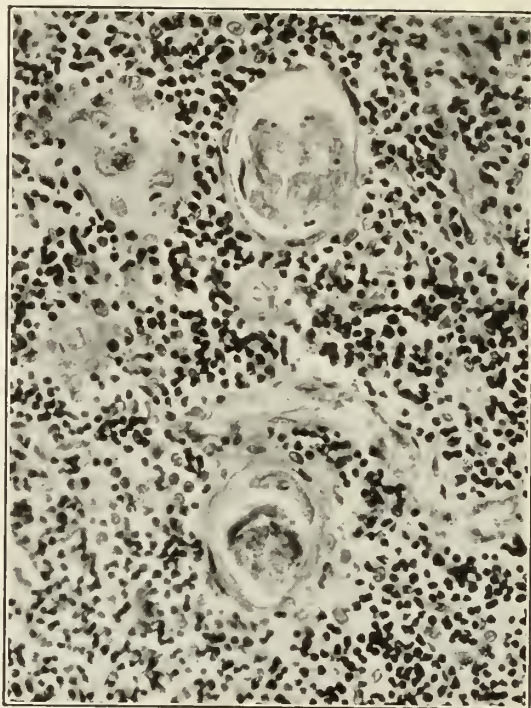


Fig. 5. Bronchopneumonia in child of 1 year who died. Lymphoid elements dense especially in periphery of lobules. Medullary area shows many normal-appearing Hassall's bodies.

the parasympathetic division of the autonomic system, and that its activity is normally opposed by the sympathetic division of this system. Vagotonic symptoms may be produced either by stimulation of the vagus, the parasympathetic, or by a reduction of the activity of its normal antagonist, the sympathetic. Peterson¹⁸ stated that irradiation over any large lymphatic structure such as the thymus would result in an effect antagonistic to the vagus, probably owing to a nonspecific protein reaction. This reaction, which is associated with a peripheral contraction and a visceral dilatation might, therefore, alleviate symptoms due to vagotonia. While this theory might apply to relieve certain symptoms of an enlarged thymus, it is difficult to conceive how it would have any but a temporary effect, as the nonspecific protein reaction should not last any great length of time.

The failure to recognize the signs and symptoms of an enlarged thymus has resulted in many sudden deaths in apparently normal children. The signs and symptoms as evidenced by fifty patients of Drs. Cowherd, Berger, Eldridge and my own are as follow:

SIGNS AND SYMPTOMS OF ENLARGED THYMUS

Cyanosis is the symptom most commonly thought of. It may last only a few minutes and may be accompanied by convulsions. If continuous it is well to suspect other disease than thymus hypertrophy.

Bloom¹⁹ contends that cyanosis beginning before the second week of life is seldom due to enlarged thymus. Sixty per cent of his cases had cyanosis. Brown, Morgan, et al.,²⁰ report 40 per cent of their cases as having cyanosis. Seventy per cent of our cases had cyanosis.

Dyspnea was the most common and striking symptom.²¹ It may be permanent or intermittent. The cause of dyspnea is variously attributed to the mere mechanical obstruction by the enlarged glands, to its intimate relation with and pressure on the heart, the great vessels, the respiratory nerves, or to some abnormal or hyperfunctional activity of the glands exerting an influence on them.

Sixty per cent of our cases had dyspnea.

Stridor is more often inspiratory though it may be expiratory or both. It may vary in degree from a gurgling or a crowing sound associated with the respiratory effort to severe paroxysm or choking which may terminate fatally.

Fifty per cent of our cases had stridor.

Inspiratory stridor which occurs spasmodically was found in 40 per cent of our cases. Noisy nasal breathing because of the adenoid tissue causing obstruction cleared with roentgen ray. Cough has been described by Blackfan²² as that of a brassy cough of a man with aortic aneurysm; recurrent infections; the respiratory centers, or a combination of these causes.

Vomiting was projectile resembling pylorospasm. Rubin²² reports enlarged thymus in thirteen cases of pylorospasm, four of which were relieved by roentgen ray. Two of our cases were relieved.

Convulsions. All cases of unexplained convulsions should be roentgen rayed for thymus.

CONCLUSIONS

1. The function of the thymus has not been proved. Presumptive evidence classes it with the endocrines.

2. Thymic hyperplasia occurs in a large percentage (40 to 50 per cent) of new-borns.

3. It represents a potential danger to life, particularly during the course of acute respiratory infection.

4. Any abnormal respiratory symptom in the new-born or in early infancy should suggest a roentgram to determine the possible existence of a hyperplastic thymus.

5. All hyperplastic thymi in infants, whether or not accompanied by symptoms, should be given the benefit of roentgen therapy.

6. The concept of a pathologic state arose from misconstruing the normal prominent thymus and lymphoid tissue for a constitutional abnormality and, vice versa, the involuted, the inconspicuous thymus of inanition being misconstrued for the normal.

1316 Professional Building.

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DISCUSSION

DR. CHARLES E. FALLET, De Soto: This subject is of great interest to the general practitioners, whom I represent. Acute sinusitis and maxillary sinusitis, especially the latter, are two conditions the general practitioner is frequently called upon to treat. Dr. Connell recommended heat and drugs in the treatment of these diseases. I think it would be interesting if the Doctor would in closing tell us what remedies he would recommend for acute maxillary and frontal sinusitis.

DR. SELDEN SPENCER, St. Louis: I am interested in what Dr. Connell had to say about sinus infections as a focus of infection. I agree with him and I would be interested to know in what proportion of cases the sinuses are a focus of infection.

As to what Dr. Sauer said about the roentgen ray, I would not want to do without it, but personally I do not feel that it is always final.

I was glad Dr. Sauer brought out the point about the cases in which there is no history and no evidence of a former middle ear suppuration. We are likely to be misled by these histories because the inflammatory process or infective process can reach the middle

ear and mastoid cells and beyond without our ever discovering the fact that there has been middle ear trouble.

DR. W. E. SAUER, St. Louis: I would like to ask the frequency of focal infection of the sinuses. Sinus infections that cause focal infections are low grade hyperplastic forms that cause very few symptoms. It is being brought out more and more that the cases in which superficial examination is made, hyperplastic and polypoid conditions in the ethmoid or maxillary sinuses are overlooked. Only a careful clinical examination of the sinuses by roentgen ray will discover these cases. As time goes on we will find the sinuses play a much greater role in focal infection than they are now given credit for.

Dr. Spencer has covered the subject thoroughly, but there are one or two points I wish to discuss. One point I would like to stress, and that is the case he mentioned with slight involvement of the middle ear which subsides and the patient is lost sight of; and in two or three weeks there is pain back of the ear and some swelling. Those cases are easily overlooked, and are the ones in which the roentgen ray is a very valuable adjunct of our armamentarium. Dr. Spencer seems to think the roentgen ray is only an additional aid, but in my experience a good roentgenogram in the diagnosis of mastoid disease is a very valuable aid, especially in adults. In children we find it less so.

A child I saw recently had an adenoid and tonsil operation and developed a pain in the ear. The attending physician thought the patient had a boil in the external canal; the symptoms subsided. Four weeks later the patient again had pain in the ear and was brought to the city. I saw the patient later and he had a temperature of 102°. He did have a boil in the external canal and also tenderness above the mastoid area a half inch beyond the mastoid cells. Roentgen ray showed a diploetic mastoid with no cells. The symptoms in the canal subsided but the patient still had a temperature. The blood count was about 1300, but the patient still looked very ill. An operation was decided on and we opened up over the area of tenderness and found a subperiosteal abscess with a sinus in the bone leading to an extradural abscess. Two weeks later we opened an enormous brain abscess. Evidently in the beginning the patient must have had some middle ear involvement. I think the infection must have traveled through the middle ear to the bone. I want to stress the value of the roentgen ray picture. It is a wonderful aid in diagnosis.

If the patient has had a long period of sepsis I think it is always wise to have a blood transfusion before you operate. As I brought out in the paper, I do not think there is any doubt that in many cases we have considerable shock from the operation and a properly given blood transfusion will help to bolster up the patient and also combat the bacteria.

DR. E. S. CONNELL, closing: As to what we do for acute maxillary infections I think possibly the Doctor misunderstood my statement about using heat and drugs in the treatment of acute sinus disease. The statement was, that we use heat and drugs for the relief of pain in acute sinus disease. In the vast majority of really acute cases we shrink the nasal mucosa with adrenalin or synephrin. I do not favor ephedrine, for I think if it is used over a long period of time it produces inflammation of the nasal mucosa. Others are beginning to realize this for I received a questionnaire not long ago on the use of ephedrine. Frequently we get no relief in the maxillary by any method except a simple puncture followed

by irrigation. That will relieve the pain in almost all acute maxillary infections.

In regard to focal infections and the percentages; I cannot answer that question for the simple reason that the percentage of infections developing from sinus disease would have to be based on the total number of cases of sinus disease, and the nose and throat specialist sees only those cases that are having sufficient trouble to consult him. Of the cases we see, at least 70 per cent shows evidence of focal infection from the sinuses. Of course we have to consider, before answering that question, the cases of sinus disease that the general practitioner and all other physicians see but are not sufficiently severe to refer to the specialist.

The point brought out about the low grade type of infection coming from the sinuses is perfectly true, and the article I quoted came from the Mayo Clinic. Many physicians read with a great deal of respect articles emanating from the Mayo Clinic, and this article gives the impression that the sinuses do not amount to much as the cause of focal infection; but my experience has been just exactly the opposite. In many, many cases of focal infection the patient has been looked over from head to foot and yet had nothing whatever done to establish a diagnosis of sinus disease or an understanding of the condition of the sinuses.

I want to emphasize the point that the mastoid operation may be in many instances a preventive measure. I have in mind the chronic suppurating ear. So often people with that type of ear will have an attack of influenza, or a bad head cold, and in two or three days they have meningitis and die. I have just come through that experience. Two days ago I lost a patient who had had suppurating ears since childhood. He was about fifty. He took a bad cold and in two days was brought into the hospital with meningitis, a cell count of 3,000, and both long and short chain streptococci in the spinal fluid. It is almost hopeless to bring a case of that kind to the otologist. It should have been brought to the otologist years before.

I would like to ask Dr. Sauer's experience with blood transfusion in the treatment of this disease.

DR. URBAN J. BUSIEK, Springfield: The role of the thymus at present seems to be the subject of considerable controversy. In the past some of us rather thought that sudden death in office practice was the so-called "thymic" death. However, in the recent literature the role of the thymus in sudden death has been rather discredited by some writers. From all that has been written and from experience I feel there is something to the subject, although the thymus itself is probably not the only factor, perhaps not the main one.

In 1930 Aldrich (quoted by Dr. Gilkey) said there was a relationship between enlarged thymus and derangement of the sympathetic nervous system, especially of the adrenal cortex. Since reading that article I have observed about eight cases in the last two years which gave some of the symptoms that Dr. Gilkey enumerated of so-called thymic disorder. Most of these cases showed a rather large thymus shadow, but nothing that could be construed as a very definite enlargement. After roentgen therapy all symptoms abated almost invariably and all the patients are still alive. The vomiting stopped rather suddenly after roentgen therapy.

I have had two cases of sudden death which could be explained on this basis. The first was a huge child two years of age who died suddenly. I was called the day it died. At postmortem we found a

thymus about three times the normal size. Just a few months ago I saw a child who had not previously been sick. It was dead when I arrived. At autopsy, the thymus was found to be two or three times the average weight. There was hyperplasia of all the lymphoid tissue, the spleen was very large, the mediastinal glands were large, the mesenteric glands were large, and Peyer's patches were the most prominent I had ever seen. The autopsy was about to be terminated when I requested that the adrenals be examined and was gratified to see that they agreed with the reports of some authorities because there was practically no adrenal cortex. That case illustrated to me that there must be something in status lymphaticus that does not belong to the thymus, but that these other factors enter in.

DR. J. S. SUMMERS, Jefferson City: I would like to ask Dr. Gilkey to explain the roentgen ray technic for treating the thymus.

DR. E. S. SMITH, Kirksville: I should like to ask Dr. Gilkey to state whether there was at any time any evidence in the cyanotic babies of persistent ductus or incomplete closure of the ring?

DR. HARRY M. GILKEY, closing: In reply to the last question, I have not had postmortems in a large enough number, but those we have had did not show open ducts.

Dr. Lockwood gave the first two children roentgen ray treatment twice daily. These were extreme cases. Of course treatment would vary with the individual.

I am glad Dr. Harrison mentioned the statistics at Boston. They are absolutely in accord with records of Cooperstock at the University of Michigan. They had a report of eight children, picked up by the routine roentgen ray of the chest before an anesthetic, being given prophylactic treatment. Six of the cases came to autopsy and five showed a thymicolymphatic constitution. I am still of the opinion that it is impracticable for most of us to have roentgenograms of every child receiving an anesthetic, but a careful history should be taken of cyanotic spells early. Two of these cases showed very definitely where we failed to take a history before the anesthetic was given.

I think the case of Dr. Howard is very important, and somewhat uncommon.

EXPERIMENTALLY PRODUCED PEPTIC ULCERS

Frank C. Mann and Jesse L. Bollman, Rochester, Minn. (*Journal A. M. A.*, Nov. 5, 1932), point out that acute gastric or duodenal ulcer has been produced experimentally by numerous methods, but the subacute or chronic ulcer has rarely been produced in animals. They present a review of the results of investigations carried out in their laboratory over a period of years on experimentally produced peptic ulcer. The lesion they have studied simulates both macroscopically and microscopically peptic ulcer as seen in man. They have determined some of the factors responsible for its causation. They have been able to observe the development of the lesion from its incipency to its maturity when it had become a typical chronic peptic ulcer as seen in man. They have also been able to make the chronic lesion heal and to observe the process whereby it heals. The studies have given them a clear, composite picture of the entire life cycle of the experimentally produced peptic ulcer.

KERATOSES OF THE FACE AND HANDS

A DIFFERENTIAL DIAGNOSIS BETWEEN PRECANCEROUS AND BENIGN KERATOSES

G. V. STRYKER, M.D.

ST. LOUIS

A keratosis is a thickening of the horny layer of the skin. This thickening may arise as a result of internal causes such as that produced by the oral or intravenous administration of arsenic. It may result from congenital and inherited variations in the epidermis, or from an infection of which the gonorrheal keratosis is an example. It may also be produced by the repeated or excessive application of such external agents as coal tar and its derivatives, mineral and vegetable oils, roentgen rays, radium and the rays of the solar spectrum originating from the sun or produced artificially.

The keratoses with which we are especially concerned are localized brown to black, slightly elevated, scaly lesions which occur chiefly on the exposed surfaces of the body.

There are two distinct types, (1) the seborrheic keratoses and (2) the senile keratoses. The importance of these lesions depends upon their precancerous tendencies. The seborrheic keratosis is a relatively benign lesion while the senile keratosis constitutes a true precancerous dermatosis. Emphasis of the salient differential points of clinical diagnosis should render recognition less difficult and lead to proper treatment.

SEBORRHEIC KERATOSES

Seborrheic keratoses, sometimes also called seborrheic warts or senile warts, make their appearance as early as 40 years of age. They involve the forehead, the temple region near the hair line, the scalp and the cheeks. They are also common on the chest and back. They may appear on the arm but rarely on the forearm and never upon the back of the hand. The lesions may be single or multiple. They are flat topped, oval, slightly elevated, light to dark brown and covered with a greasy verrucous scale which when removed reveals a white oozing surface of small filiform projections. There is little infiltration in the deep layer of the skin. The lesions have the appearance of sitting upon the surface of the skin. Two types of seborrheic keratoses are encountered, one is flat and has a smooth though greasy scale while the other has a verrucous surface and is elevated. The former type is frequently confused with the senile keratoses.

Read at the 75th Annual Meeting of the Missouri State Medical Association, Jefferson City, May 23-26, 1932.

The presence of pigment and certain histologic characteristics have led some observers¹ to classify the seborrheic keratoses among the nevi, explaining the tardy development to a delay or lag. Though the proof of this contention regarding their origin remains to be substantiated, it is a matter of repeated clinical observation that seborrheic keratoses occur most frequently in individuals with a seborrheic or oily skin and, moreover, they occur commonly in the areas of greatest oiliness.

Seborrheic keratoses may be considered as benign lesions. I have never seen one undergo carcinomatous degeneration. Eller² says seborrheic keratoses on the face may give rise to epithelioma; when this occurs the epithelioma is of the basal cell type.

SENILE KERATOSES

In order to arrive at a correct diagnosis it is important to remember that there may be a similarity, especially in the early lesions, which makes a clinical differential diagnosis between the flat type of seborrheic keratosis and senile keratosis impossible. In this event one must resort to the biopsy and histologic study.

Senile keratoses are found most commonly upon the exposed surfaces, the neck, face and backs of the hands. They rarely occur on the forearms and seldom on the covered portions of the body. They are round or oval in shape, flat topped and covered with a gray or black scale which is hard dry and difficult to remove. The lesion may be level with the skin or the scales may pile up in a dry hard mass above the level of the skin and produce what is clinically known as a cutaneous horn. The age at which these lesions make their appearance is about 60 years.

Senile keratoses occur more frequently in men than in women, in blonds more than in brunettes and in those who live out-of-door lives more than in those whose occupation keeps them protected from the sun.

Certain persons have an idiosyncrasy to ultraviolet light. In these susceptible individuals prolonged exposure to the sun or artificial ultraviolet rays will bring about a condition known as farmer's skin in which the skin becomes thin and dry and contains permanent freckles. These freckles may develop into senile keratoses and later into carcinoma. The fair skinned persons who do not tan but develop freckles should be protected from undue exposure to the sun and artificial ultraviolet rays.

If the present vogue of excessive sun and artificial light bathing does not soon pass out of fashion we may reasonably expect an increase in precancerous dermatoses among those who

are susceptible to its influence. Findlay³ is of the opinion that prolonged exposure to the sun rich in ultraviolet may produce skin cancer in man. He was able to produce a papilloma in the skin of a white rat by exposure to artificial ultraviolet rays. This papilloma was histologically similar to the senile keratosis of man. Drabble is quoted by Findlay as having found 190 cases of skin cancer in cattle in New South Wales. In all cases the animals, which were wholly or partially white, showed a chronic dermatitis on the unpigmented portions of the skin. Where malignant changes had occurred the areas involved were also partly or wholly white except in three cases where the growths occurred in old brand scars. MacKee⁴ believes the fad of exposing the bodies of children to solar radiation and artificially produced ultraviolet radiation daily and indefinitely without medical supervision may eventually give rise to farmer's skin in a small percentage of children who happen to be idiosyncratic.

That senile keratoses are precancerous there is no doubt. It is furthermore agreed that when carcinomas develop in these lesions they are usually of the malignant or prickle cell type. It is characteristic of these lesions to go through periods of growth and spontaneous involution only to be followed by a reappearance and increase in size. The presence of a zone of redness surrounding the lesion and an increase in the thickness is an indication of beginning degeneration and a signal for prompt treatment.

TREATMENT

Uncomplicated seborrheic keratoses are not removed except for cosmetic reasons. When their removal is requested it may be done by freezing with solid carbon dioxide, destruction by the coagulation current or by simple excision.

Senile keratosis, a true precancerous lesion, should be treated before malignant changes occur. Hertzler⁵ has said that "more patients present themselves in this clinic hopelessly sick with malignancies, the result of neglected or maltreated simple lesions of the skin, than from cancer of the uterus or mammary gland or the lip."

The agent employed may vary but whether it be excision, coagulation or radiation with radium or roentgen rays, the lesion must be entirely destroyed and a sufficient amount of surrounding tissue included so as to forestall a recurrence and subsequent activation.

1143 Missouri Building.

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DISCUSSION

DR. A. H. CONRAD, St. Louis: It is indeed gratifying to hear the statement that a biopsy should be made of these lesions upon the face when they look suspicious. It is at times rather hard to make a differential diagnosis of senile and seborrheic keratoses of the face, but by simple biopsy, taking in part of the edge of the lesion, a differential diagnosis can be readily made. It is rather important because seborrheic keratoses as a rule are benign, while those that are senile usually develop into epithelioma.

DR. NORMAN TOBIAS, St. Louis: There are two classes of patients who have keratoses. One group seems to have cancer phobia—they go to the doctor for treatment when they notice any spot on the skin that refuses to heal under ordinary treatment. I am glad to say that we see more of these patients today than we did ten years ago. Then there is a group that wait until the skin is covered with lesions, and who think keratoses are a part of old age. Many of these patients do not come for treatment until epithelioma has developed.

THE MODERN MANAGEMENT OF ACNE VULGARIS

NORMAN TOBIAS, M.D.

ST. LOUIS

The importance of acne vulgaris to the general practitioner lies in the fact that the disease while not serious from the standpoint of its pathology is of great importance to the young patient from the cosmetic and mental angles. Too often the disease is considered a minor affliction and "hit or miss" treatment is administered with commensurate results.

The etiology of acne is unknown. Even the role of the acne bacillus has not as yet been evaluated. It is true that microbic infection cannot be disregarded but a special soil plus the microbic factors are important essentials. Darier has coined the term "kerosis" to describe the pathological effects of this special predisposition or soil which gives the skin the following characteristics: a dirty hue, enlargement of the pilosebaceous openings, a thickening of the skin and a coarse-grained appearance. Kerosis may be a family feature.

The contributory factors in acne, although purely presumptive since no direct evidence exists to prove their relationship, have a direct bearing on failures in treatment. Among these

may be mentioned seborrhea of the scalp, digestive disturbances, constipation, focal infection, anemia and endocrine disturbances associated with the adolescent state.

Gastric disturbances may aggravate acne as well as other skin disorders through the vasomotor route but since many cases of acne are free from these conditions this factor can be dismissed as having no direct significance. Some cases of focal infection may predispose the patient to microbic disease but focal infection often exists in the absence of acne. The removal of diseased tonsils in relapsing cases of acne deserves conservative judgment since tonsillectomy rarely causes improvement. However, when there is a history of repeated attacks of tonsillitis, or when there are undisputed focal infections of the teeth, removal of these foci is of course indicated.

Secondary anemias, while not as common as formerly in adolescents may be brought about in acne subjects by self-imposed reducing diets, cigarette smoking and sedentary habits. A certain percentage of relapses in acne may improve remarkably from measures to correct this condition. This will be discussed later.

The endocrine factor plus the presence of hormones in the blood at the time of sex gland development is a contributory factor which cannot be neglected although it is difficult to prove. However, it is the mechanism behind the associated oiliness of the skin that occurs giving rise to the proper soil necessary for the development of acne lesions.

There is no doubt that the actual factor in acne is a simple mechanical blocking of the pilosebaceous ducts, the cause of which has not been ascertained. The presence of the acne bacillus, the bottle bacillus and staphylococcus albus and aureus since they are present in normal skins, would be of no special significance were it not for the glandular blocking. The pathology is similar to that seen in obstructed gallbladders, appendices and tonsillar crypts. Therefore, obstruction plus infection are significant factors in the cause of acne.

Acne cannot be treated properly unless the different types are thoroughly understood. Localization of the lesions has a bearing on the associated factors. The common type is generalized over the face, cheeks and chin with or without involvement of the shoulders and back. Forehead acne is often associated with seborrhea of the scalp which must be treated to obtain results. Chin acne is usually associated with ovarian dysfunction. Collar-area or jaw acne occurs in men and is very often aggravated by external irritation such as shaving. Occupation acnes occur on unusual areas such

as the arms and are caused by grease and oil. Bromide and iodide acnes are characterized by discrete lesions plus a normal skin, i. e., absence of comedones and oiliness. These halogens often aggravate an ordinary case of acne and every patient must be questioned regarding their use either in "blood or nerve tonics" or in the form of iodized salt which has become popular in the modern household as a preventive of goiter.

The Mental State in Acne.—Acne in girls is often associated with a peculiar state of mind which may be styled as an inferiority complex the degree of which depends on the duration and severity of the acne. In aggravated cases patients will shun social contacts, stay at home for days at a time and even give up school. Irritability is often an associated feature. These children become a source of great anxiety to the parents.

Surcharged with this neurosis patients may sit for hours before a mirror and attempt to express blackheads and otherwise damage the skin with the production of neurotic excoriations which may leave scars. The physician can produce great improvement in this mental state by rendering an optimistic prognosis, giving sympathetic advice and instituting proper treatment as early as possible.

Surgical Measures.—Acne surgery is required in those cases characterized by pustule and abscess formation. If these are not treated the patient is left to her own devices and may attempt to open them with needles, etc., which may do more harm than good. Poor technic may cause a lateral break in the sebaceous ducts with resulting periglandular infection and abscess formation that may require weeks to involute. When using comedo extractors, the wide opening type is preferable. Acne surgery should be performed after roentgen ray exposure and weekly treatments are usually sufficient to control lesions amenable to this type of treatment.

Vaccines.—Personally I have not seen any beneficial results from the use of either straight or combined stock or autogenous vaccines. This view is in accord with most observers. In fact patients with acne of long standing will reject vaccines because of their previous experiences. The failure of vaccines in acne proves that the disease is not primarily microbic and that soil and associated factors are more important. To attempt a cure with vaccines alone or local treatment delays a cure and may cause unnecessary scarring.

Nonspecific Therapy.—Foreign proteins, such as milk, typhoid vaccines, etc., and such drugs as manganese butyrate and the tin prepa-

rations have proved disappointing in my hands. The pathology of acne is such that it cannot be influenced by a rise in leukocytosis or temperature. The widespread use of yeast by the laity has no foundation. Its value, if any, lies in its laxative effects and has no specific action. Self-medication with yeast with resulting delay in proper treatment prolongs the disease and adds to the scarring that is inevitable in the pustular cases.

Bacteriophages.—My experience with bacteriophages has convinced me that improvement is only temporary. They are of value only in the pustular cases. I have seen no advantage in the autogenous bacteriophages over the stock preparations. In twenty pustular cases where stock bacteriophage was used, good results were seen in three, fair in ten, and none in seven.

Ultraviolet Light Therapy.—There is no specific action in the ultraviolet ray in the treatment of acne. In erythema doses it may produce exfoliation and by so doing can replace local therapy used for this purpose. It can be used in the erythematous and juvenile types of acne where roentgen ray treatment would not be safe. In females with a tendency to hypertrichosis ultraviolet light is not indicated because it may stimulate the growth of superfluous hair.

Local Treatment.—The indications for local treatment are in those cases where roentgen rays are not indicated and in those where sufficient roentgen ray treatment has been used. Ointments usually are not well tolerated except in the seborrheic cases. Lotions containing sulphur and resorcin are at first useful but gradually lose their effectiveness. During the period of roentgen ray exposure it is not advisable to use local therapy except very mild astringents.

The patient should be impressed with the importance of thoroughly washing the face at night using tincture of green soap as a detergent. Cosmetics may be used but all creams should be prohibited. Powder puffs should be changed weekly for general hygienic reasons.

Roentgen Ray Therapy.—Only two agents will permanently cure acne—nature and the roentgen ray. To leave it to nature will cause unnecessary scarring. The most popular method of treating acne is roentgen ray therapy. It is indicated in about 80 per cent of the cases. Its advantages are the rapidity of response, the simplicity of technic and the greater percentage of cures obtained. The best responses are in the severe indurated cases characterized by excessive oiliness, deep hypertrophic lesions and pustulation. The treatment is least beneficial in

the mild acnes where the lesions are few and scattered.

Roentgen ray should not be used in the erythematous and juvenile types of acne nor in those cases that have been treated with roentgen ray by other physicians until the dosage given has been obtained. The well known MacKee system is thoroughly established as a safe method of estimating the dosage. There may be some disagreement as to the proper amount of roentgen ray that should be given in a stated case, but these facts are essential: (1) Give no more than necessary to obtain a clinical response. (2) Stop treatment as soon as the condition clears up. The smaller the number of treatments necessary to obtain results the less likelihood of relapse. It is also significant that the older the patient the better the response to radiation. If the disease does not begin to clear up after the first course of treatment one should be hesitant about administering further treatment. There is general agreement that the dosage should be one fourth unit of unfiltered rays given weekly for a total of from fourteen to sixteen treatments. These may be divided up into two courses with four to eight week intervals between courses. A total of not more than four and one half units should be given oily skins in the course of a year because of the danger of roentgen ray sequelae. Patients with dry skins rarely tolerate more than two and one half units total dosage.

During the first two weeks of treatment the condition often becomes aggravated due to the stimulation of the pilosebaceous glands. Patients may become disappointed with the results at this time but genuine improvement occurs in about four weeks after commencing treatment.

The Diet in Acne.—There seems to be a prevailing opinion among physicians as well as the laity that dietary regulations are of paramount importance in the treatment of acne. In my series of 162 cases only 16 per cent stated that carbohydrates aggravated the condition. In some of the cases patients stated that 24 hours after ingestion of candy, chocolate or pastries new lesions would make their appearance. In 12 per cent of the cases the ingestion of lard and pork products had a definite effect in the production of new lesions. The relationship of pig fat to glandular irritation and sebum chemistry is interesting and merits further study.

The effect of a high carbohydrate diet on the production of acne lesions is not thoroughly understood and the presence of a hyperglycemia probably has no bearing on the pathology of the disease, contrary to opinion in the past. Strickler and Saylor's blood sugar studies¹ in acne have shown that the blood sugar

undergoes cyclic variations, and that it is exceedingly difficult to show that carbohydrate feeding has any effect on the blood. In their series of cases about 10 per cent had hyperglycemia, the highest reading being 140 mgs. The other 90 per cent had low or normal blood sugars. From the work of Usher² who showed that sweat is an excellent culture medium for bacteria it would be expected to find that high blood sugars would especially be found in the pustular acne cases but this relationship was not established in their series. Blood sugar levels are usually not increased even with high carbohydrate feeding as the body establishes a norm where metabolism is normal. It is therefore evident that carbohydrates do not affect acne via the hyperglycemia route; it is more possible that the splitting of carbohydrates in the colon and a change in the bacterial flora cause the production of toxins that may have a direct effect upon the skin in acne. The fact that certain cases are aggravated by a high carbohydrate diet points to changes existing in the colon while those who tolerate carbohydrates probably have normal colons and intestinal floras.

Results of Treatment.—In 162 cases of acne seen in private practice 28 were the juvenile or acne simplex types and were not treated with the roentgen ray while of the remaining 134 cases treated with roentgen ray 68, or 57 per cent, were cured after the first course; 22, or 16 per cent, were cured after the second course; 34, or 27 per cent, were improved but not cured by the roentgen ray or had relapses following treatment. Of the 34 cases not cured with roentgen ray therapy 10 failed to follow dietary instructions, 9 had gynecologic conditions, 11 had secondary anemias and 1 had infected tonsils. All improved considerably when the secondary factors were eliminated or treated. Three of the relapses had no positive findings but failed to improve with medical treatment.

SUMMARY

1. The various contributory factors in acne must be studied and treated in order to prevent relapses.
2. Roentgen ray therapy is the best measure to insure permanent cure.
3. Surgical measures, vaccine therapy and ultraviolet light have their special indications.
4. The importance of diet as a contributory factor varies in different patients. Hyperglycemia is not a constant factor.

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5. The mental state of the individual must be soothed by sympathetic advice and proper treatment.

837 Missouri Building.

DISCUSSION

DR. A. H. CONRAD, St. Louis: I believe both essayists are to be congratulated upon the way they have covered the field.

In regard to Dr. Engman's paper on pathogenesis, I am of the opinion that the endocrine system has a great deal to do with the formation or at least is a factor in acne. We never see acne in children below the age of eight or nine years, and it never comes on except at the age of puberty. Not only that, but in women we usually find the condition is a great deal worse at the time of menstruation. That at least has been my experience. I believe this is due to some imbalance of the glands of internal secretion.

I believe we should pay more attention to the treatment of acne. I have had patients with faces scarred due to neglect of treatment because they had been told "that is only acne. It will disappear in two or three months." The result is that they paid no attention to the condition until it became so severe that the face was a mass of scars.

As to the treatment with vaccines, possibly I have had experience a little different from that of the men who have spoken as I have had fair results from vaccines. I have used nothing more than staphylococcus vaccines, not the acne vaccines. I believe the roentgen ray has its place in the treatment of acne, but not in the treatment of the very young. As Dr. Tobias has pointed out, in the encysted type in the older individual it is of greater service than in the young patient. The promiscuous use of the roentgen ray by men who do not know the exact procedure in the treatment of acne is somewhat dangerous because of roentgen ray dermatitis. I believe that use of the MacKee system would avoid this condition.

DR. E. E. MANSUR, Jefferson City: I have been much interested in the treatment of acne vulgaris for eighteen years and have treated over 125 cases. I have been impressed in that time, not so much in my own experience as in the literature, with the propriety of going into the history of the case, particularly in regard to previous treatment. I never treat a case of acne by irradiation until I have obtained the dosage of the previous treatment. Nowadays it is not uncommon to have a patient say, "I want X-ray treatment of my face." I ask, "What do you know about it?" The reply is, "I took it at St. Louis," or some other place. We always find out what dosage they had, and I think that is very important.

Patients frequently say, "If you are going to treat by irradiation, what are you going to do about this infection?" The treatment of acne vulgaris by irradiation consists of starvation of the organisms normally present on the face. It is not an antiseptic treatment, it is a starvation treatment. If you stop the excess of oily secretion of the sebaceous glands the organisms will disappear.

In local treatment I use something like this: In the wintertime I tell the boys and girls that the pustules should be opened up, so use soap and water, dry the face, rub with cold cream and wipe off the cream with soft tissue. In the summer I have them use alcohol and powder. The large pores will fill with dirt and the face must be kept clean.

The permanent effect of irradiation will easily run

to 50 per cent of all cases. In old cases with scar formation I have had gratifying results, and in several cases have removed pock marks and left the skin almost smooth. I had a patient who had pock marks you could see across the street. Three years ago I gave irradiation and now the pock marks are gone and his face is smooth.

Personally, and for practical reasons, I use a heavier dosage than Dr. Engman. They use anywhere from one fourth to one sixth of an erythema dose. We give one half an erythema dose and subsequent treatment of one fourth to one sixth, using the MacKee system.

We never treat these patients oftener than once in three weeks. The effect of irradiation persists for three weeks. You do not know the ultimate results of the treatment until at least three weeks. The treatments should not overlap oftener than three weeks. We use filtered irradiation for the reason that it protects the outermost layer of the skin. I have always thought the treatment is given primarily for the sebaceous glands below the skin surface, and in order to reach those you need a little filtration.

DR. NORMAN TOBIAS, closing: I want to stress again the importance of the family physician being sympathetic with his young patients who come to be treated for acne. I have treated several young girls who were actually shunned by their friends on account of acne but have been benefited by treatment. These cases should be treated very kindly.

DR. G. V. STRYKER, St. Louis: The two essayists have covered the subject of acne vulgaris in a very comprehensive manner. When considering this subject we must realize that we are treating a condition which is really cosmetic and is a minor affair; therefore, treatment should not be pushed to the point where it does the patient harm. Acne is a disease of early youth and these people are very self-conscious. They are constantly worrying about their appearance, their clothes, their physical make-up, and it is a serious mistake to belittle the condition. It is one of the things we physicians are very likely to lose sight of and make the patient more vulnerable to those who will be more sympathetic although they have less knowledge.

Dr. Engman's paper brought up the question of heredity. That is extremely important because it is impossible to have acne unless you have a sufficient amount of sebum secreted by the sebaceous glands to furnish the proper culture media upon which the organisms may grow. It is a common experience to find individuals having acne in a family who have greasy, oily skins. The Doctor's chart brought that out nicely.

The treatment of acne has to be considered carefully because at the present time more people are seeking advice about it and are coming at an earlier age. When they come at nine to fourteen years with the papillary type of acne, or black heads, I do not think any one is justified in using heroic measures. It is better to explain the situation to the patient and parents, tell them you will control the disease as much as possible, and then at a later date if it appears that you are not able to clear it up, more heroic treatment can be used.

I have never had satisfactory experience with vaccines. The good results occasionally obtained are due to the foreign protein effect as much as the specific effect of the vaccines. The roentgen ray is certainly efficacious in acne vulgaris, but it must be used with great caution. It is a serious mistake for any one because he has roentgen ray equipment to treat

an acne patient. Erythema of the very slightest degree must be avoided because it will produce a subsequent condition worse than the acne. But the roentgen ray carefully administered, the dosage being held down and the number of treatments kept at the minimum, is a highly efficient method.

PRECANCEROUS LESIONS OF THE SKIN

LANTERN SLIDE DEMONSTRATION

A. H. CONRAD, M.D.

ST. LOUIS

Of course the actual cause of cancer is unknown, but much is known of the predisposing exciting cause, especially in cancer of the skin. First, I might say that trauma is of the greatest importance because trauma enters into quite a large number of precancerous lesions. The trauma may be mechanical, it may be physical, it may be chemical, actinic or it may be from disease.

The mechanical trauma may be a blow on the face or breast, the pressure of a pipestem on the lip (we see that frequently), from ill fitting dental plates and from snags of teeth which cause constant irritation and trauma.

In chemical trauma one of the most frequent causes is smoking and chewing tobacco. What is the difference between the pipe smoker with the mechanical irritation of the pipe, and the cigar smoker with the chemical irritation of the smoke and the tobacco itself? Again, we have the tar cancers which were seen years ago in chimney sweeps, and now seen among men who work with tar or tarry substances. These are seen rather frequently. In arsenical cancers we may get a cancer by the application of cancer paste. We see these very frequently in patients who have been treated by unethical men who call every lesion they see a cancer and treat it with arsenical paste. In these we very frequently see benign lesions become malignant from the application of the paste itself. As pointed out by Dr. Stryker a moment ago, the external application of arsenic is occasionally followed by keratosis and then cancer.

The actinic rays also are a contributing cause. The wave lengths of ultraviolet and roentgen ray we know are at times definitely predisposing causes of cancer. The excessive stimulation of the skin by sunlight and by the repeated application of the ultraviolet ray by individuals in their homes without proper medical supervision, may become a predisposing cause. I believe the time is not far distant when we will have a species of cancer known

as "sunlight" cancer. I do not believe any great good can come of the vogue of being sun tanned all over the body, for we know that the individual who is constantly exposed to the actinic rays of the sun does develop keratosis, or farmer's disease, which is seen both in the Western States and along the coast. There is another condition, xeroderma pigmentosum, which almost invariably causes carcinoma.

In addition to trauma and irritation we have disease itself, such as lupus vulgaris, lupus erythematosus, and scars, especially old scars and burns and some luetic scars. Leukoplakia and psoriasis are also diseases which sometimes predispose to cancer.

There is one thing about irritations, etc., that I think is worth mentioning, and that is that varicose ulcers—it has never been my fortune to see a cancer develop on a varicose ulcer. This ulcer has been there for years and years, it has been stimulated by various medication, but I have never yet seen carcinoma develop on an old lesion of that sort.

Beaumont Medical Building.

DISCUSSION

DR. G. V. STRYKER, St. Louis: Dr. Conrad's paper is a splendid testimony to the variety of things which affect the skin in the production of carcinoma. We do not know what produces cancer, but we certainly have very definite evidence, as he has shown in his slides, that there are many stimuli which if persisted in will stimulate the epithelium to a regeneration which goes beyond normal limits and becomes carcinoma.

One of the important facts to me in this demonstration is that we should consider nothing too trivial to be removed completely and thoroughly in order to prevent the development of some of the conditions which Dr. Conrad has shown, and I am sure he could have shown us other pictures of lesions in the late stage which have arisen from similar lesions.

KETOGENIC DIET IN TREATMENT OF URINARY INFECTIONS OF CHILDHOOD

Henry F. Helmholz, Rochester, Minn. (*Journal A. M. A.*, Oct. 15, 1932), states that by the use of the ketogenic diet the urine can usually be rendered bactericidal when its pH is below 5.6. The bactericidal power apparently is not due to acidity alone or to the presence of diacetic acid or sodium diaoetone. Acidity in synergy with substances hitherto not yet determined probably accounts for this bactericidal action. Ketonurine (condition of the urine after the administration of a ketogenic diet) of a pH of 5.5 is an excellent antiseptic for clearing urinary infections, and ketonuria should prove useful in the preparation of patients for operation on the urinary tract. By means of the ketogenic diet three patients with major urinary anomalies have been freed from infection. At the Mayo Clinic no other method of treatment has been successful in this type of case. The clearing of an infection by means of the diet does not necessarily mean permanent cure.

CINCHOPHEN POISONING:

REPORT OF A FATAL CASE *

EMSLEY T. JOHNSON, M.D.

KANSAS CITY, MO.

In reporting an additional case of fatal cinchophen poisoning our main object is to again call the attention of the profession to the possible dangers of cinchophen and its allied compounds. Cinchophen (phenylquinoline-carboxylic acid), according to Grolnick,¹ was first introduced by Dobener and Gieske in 1887 but it was not until 1908 that it was advocated by Nicolaier and Dohrn² in the treatment of human diseases. Owing to its virtue to increase the endogenous formation and excretion of uric acid, it was first used in the treatment of gout. Later it was learned that the action of cinchophen was quite similar to that of the salicylates, and it soon became a popular remedy in the treatment of all types of rheumatoid affections. Naturally, its medicinal merits were soon exploited by quacks and manufacturers of certain patent medicines. In this manner and by the ready acceptance of the drug by the medical profession it has become a universally used therapeutic agent. Being the chief constituent of numerous patent medicines so highly advertised in the "cure" of rheumatism, sciatica, etc., it is too often used without proper supervision.

During the first ten or fifteen years in which cinchophen was coming into increasing use as an analgesic it was considered one of the most harmless of drugs. Only in recent years has attention been called to the harmful and even fatal results due to the use of cinchophen and its cogeners. Fortunately most patients have a relatively high tolerance to the toxic effects of this drug and apparently sustain no injury even when large doses are taken over long periods of time. Fink³ refers to a patient under his observation who had been taking cinchophen in doses as large as nine grams a day periodically for several years with no untoward effects. However, there is a small percentage of individuals who are unquestionably hypersusceptible to the toxic effects of this drug and manifest symptoms after taking as little as one gram. There is still another class that tolerate cinchophen quite well for a while and may not develop symptoms of fulminating toxicity until after using the drug in large doses over a long period of time.

Phillips⁴ and Herrick⁵ independently in 1913 reported cases which developed urticarial or scarlatiniform rash following cinchophen

(atophan) therapy. These were evidently mild exhibitions of toxicity and recovery was rapid following disuse of the drug.

Worster-Drought⁶ in 1923 was one of the first to call attention to such systemic reactions as headache, gastro-intestinal disturbance and jaundice. Anorexia, nausea, vomiting, "heart-burn" and diarrhea are rather common symptoms in overdoses or in long continued use of cinchophen. In Hanzlik's⁷ series, 65 per cent of patients using cinchophen developed symptoms of salicylism; i. e., headache, dizziness, fullness of the head, buzzing of ears with occasional cases of nausea and vomiting. Hart⁸ reported a case of total deafness which he believed to be due to the effects of aspirin and cinchophen.

It is somewhat astonishing in reviewing the literature to find thirty-six cases of fatal cinchophen poisoning, all but one of which have been reported within the last six years. The first authentic case was reported by Cabot⁹ in 1925.

REPORT OF CASE

Housewife, aged 48, short and stocky in stature, weighing approximately 165 pounds, admitted to Research Hospital because of nausea, asthenia and jaundice. Also complained of pruritus, arthritis, and numbness of extremities. Illness began about five weeks before entering hospital, asthenia being the first symptom. This was soon followed by nausea, anorexia and jaundice, the latter gradually increasing in intensity.

Patient had malaria during childhood and rheumatism in 1918; otherwise in very good health until three months before the onset of her fatal illness when she developed arthritis in both hands and was treated by her local physician who gave her "large white tablets." (These tablets were never absolutely proven to be cinchophen except that the physician who treated the patient for her arthritis was definitely known to be a very free prescriber of cinchophen. Another physician attended the patient during her fatal illness and circumstances arose which did not permit a more satisfactory exposure of facts.)

Physical examination showed a well developed, somewhat obese woman, moderately jaundiced, who appeared toxic. Temperature 97.6, pulse 94, respiration 22, blood pressure 138/90. Some tenderness over the right upper quadrant. Urine contained bile and trace of albumin, numerous hyaline and granular casts, with 4-7 r.b.c. per high power field. Hemoglobin 84 per cent, erythrocytes 5,140,000, leukocytes 13,100, polymorphonuclear cells 84 per cent. Blood chemistry on day of admittance: N.P.N. 40, uric acid 4.1, sugar 156, icterus index 32. Van den Bergh positive, direct reaction. On seventh hospital day N.P.N. 77, uric acid 5.16, sugar 160, blood chlorides 2.8. Roentgenograms of gallbladder showed no stones and the organ did not visualize.

Patient's condition became gradually worse with increasing nausea, vomiting and jaundice. She was not operated upon and died on the eighth hospital day in a state of extreme toxemia.

* Read at the 75th Annual Meeting of the Missouri State Medical Association, Jefferson City, May 23-26, 1932.

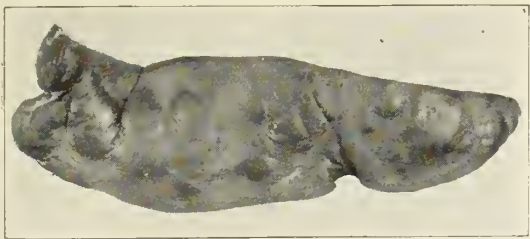


Fig. 1. External surface of liver showing alternating areas of atrophy and nodular hyperplasia; cinchophen poisoning.

At necropsy there were four liters of bile-stained fluid in the peritoneal cavity. The liver was small and nodular, weighing only 715 grams. The nodular areas were reddish-yellow and ranged from 1 to 4 cm. in diameter; some were discrete, others confluent. Elsewhere the liver was dark red, tough, wrinkled and rubbery. The gallbladder as well as the cystic and common ducts were normal. The other organs, including the kidneys, showed nothing of interest, grossly or histologically.

Histological examination of the liver showed marked disorganization in which there appeared relatively little normal hepatic parenchyma. Most sections showed complete loss of hepatic epithelium, substituted by the products of degeneration, including debris, leukocytes and young fibroblasts. In some areas there was a concentration of bile ducts. Here and there were islands of hepatic epithelium which suggested in most instances remnants of the hepatic structure rather than regenerating hepatic cells. This opinion was based on the observation that the nuclei were pale and vesicular and the cytoplasm foamy and granular. In places where the individual cell outline could be identified, there appeared to be marked swelling of the individual cells. We were unable to note significant consistency in the degenerative process as regards the portion of the lobule affected.

COMMENT

The lesions in the liver of this case, like those reported in other cases of known cinchophen poisoning, are not unlike the lesions seen in acute and subacute yellow atrophy due to causes such as effects of toxemia of pregnancy or to the toxic various synthetic chemical compounds such as carbon tetrachloride, trinitoluene and the arsenobenzols.

All degrees of liver destruction have been re-



Fig. 2. Cut surface of liver showing atrophy and hyperplasia; cinchophen poisoning.

ported in cases of cinchophen poisoning. The liver damage does not seem to depend upon dosage nor length of treatment. Some cases show severe hepatolysis after taking amounts of the drug which others can exceed with impunity. This brings up the question of hypersusceptibility or drug idiosyncrasy. The fact that some individuals may tolerate massive doses of the drug over months and years without manifesting even the slightest toxic symptoms while others will rapidly succumb to what is generally considered a therapeutic dose can only be explained by the theory of drug idiosyncrasy.

Fink believes that since cinchophen is so generally used and yet so relatively few cases show evidence of toxicity, it seems possible that the susceptibility to the toxic action of cinchophen may be an allergic phenomenon. He reports two cases in support of his views, one having

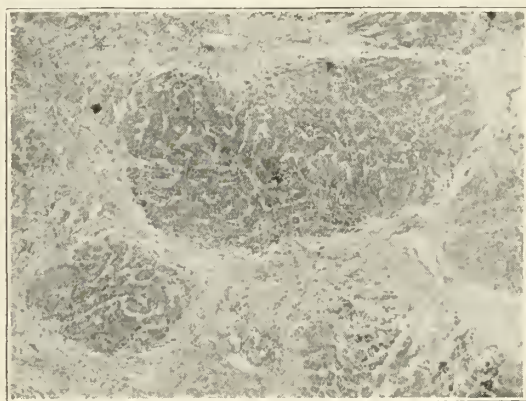


Fig. 3. Histology from atrophic liver showing degeneration, regeneration and early fibrosis; cinchophen poisoning.

asthma for five years and sensitive to feathers, horse hair, dog hair, cat hair, wool, rice, bananas and celery. This patient was given cinchophen for rheumatism and developed hives and jaundice. When the drug was discontinued the patient recovered. He was later found to be sensitive by the intradermal test to 1:1000 dilution of cinchophen. Fink's second case was allergic to strawberries. He developed hives when given cinchophen and was found to be sensitive by the intradermal test to 1:1000 dilution of the drug.

Whether hypersusceptibility to cinchophen is an allergic phenomenon we are unable to say. Fink's observations are nevertheless interesting and may offer an explanation. Fink quotes Coca in the statement that "when the symptoms are merely exaggerations of the physiologic action, the reaction is toxic; when the symptoms differ sharply from the usual action, the reaction is allergic."

Rabinowitz¹⁰ contends that an anesthetic, operative shock, periods of starvation, or any circumstance which depletes the glycogen store of the liver, may precipitate an acute cytolytic collapse of a cinchophen poisoned liver. He also believes that those with gallbladder disease, cirrhosis of the liver, pregnancy, alcoholism, and those who have suffered some previous insult to the liver, are susceptible to cinchophen or have a low tolerance to it.

While there appears to be some disagreement regarding the chemical radical responsible for the changes noted in the liver, the consensus of opinion points to the benzene ring, which is a constituent of the quinoline nucleus. Other synthetic compounds containing the benzene ring, such as arsphenamine and trinitrotoluene, are known to produce liver damage. Sutton¹¹ believes the toxic reaction suffered by the liver is due to highly toxic nitrophenols and nitrobenzenes resulting from oxidation of the quinoline nucleus.

SUMMARY

1. Although cinchophen has been increasing in use therapeutically for over twenty years it is only within the last few years that attention has been called to the possibility of fatal reactions.

2. The toxic reactions of cinchophen are for the most part limited to the liver and are thought to be due to the benzene ring or its toxic nitro compounds. The histologic changes may vary from mild degeneration to marked necrosis and atrophy, frequently duplicating the so-called "acute yellow atrophy" of the liver.

3. There appears to be an individual susceptibility or idiosyncrasy for the drug which in some respects is comparable to an allergic phenomenon.

4. There also appear to be certain factors which predispose the liver to the toxic effect of cinchophen and its allied preparations. Among these are previous or existing liver lesions, malnutrition, chronic infection, fever and any factor favoring decreased glycogen storage of the liver.

5. The toxic and lethal doses are extremely variable for different individuals. A toxic dose for one may be exceeded many times by another without producing a toxic symptom.

6. Having seen the tragedy of a fatal cinchophen poisoning we would urge those who use this drug or its related compounds to use it conservatively and be ever watchful for the danger signals—asthenia, anorexia and jaundice.

Note. I am indebted to Dr. Frederick C. Narr, Director of Laboratories of Research Hospital, for

his kind assistance and the pathological material used in this paper.

St. Joseph's Hospital.

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CONGENITAL ELEVATION OF SCAPULA AND PARALYSIS OF SERRATUS MAGNUS MUSCLE

Armitage Whitman, New York (*Journal A. M. A.*, Oct. 15, 1932), describes an operation for the relief of congenital elevation of the scapula and for paralysis of the serratus magnus muscle. One case of each condition is reported. A hitherto unreported complication of the operative treatment of Sprengel's deformity is described. The operation is illustrated by diagrams, and the preoperative and postoperative condition of the patients is shown in motion pictures.

ABNORMAL UTERINE BLEEDING

Milton E. Kahn, Buffalo (*Journal A. M. A.*, Nov. 5, 1932), reports four cases in which abnormal uterine bleeding was the first and most prominent symptom of a blood dyscrasia. Abnormal uterine bleeding is sometimes the primary and most important symptom of an underlying blood dyscrasia. Menstrual abnormality has been observed in practically all the blood dyscrasias, including secondary anemia. Thrombocytopenic purpura, above the other dyscrasias, seems most commonly accompanied by excessive, prolonged and irregular uterine bleeding. Careful and complete blood study is often of diagnostic importance in cases of disturbed menstruation for which no obvious pelvic lesion is responsible.

PERIPHERAL BURNS: THEIR PATHOLOGY AND TREATMENT *

B. L. MYERS, M.D.

KANSAS CITY, MO.

There are two principal reasons for including dual phases of the problem of burns in this discussion. First, we cannot understand the essential needs of the burned patient unless we have clearly before us what is taking place in the system of the sufferer. Second, we have contented ourselves far too long in dressing the local lesion, while the patient's life was endangered or lost, by unrecognized or unheeded conditions, extraneous to the local burn. While we have devoted ourselves to the treatment of the burn by the application of many fine, fanciful or theoretical preparations, we have neglected the crying need of the patient. In the meantime, "the mortality remains high, or is mounting."¹ To quote from Underhill,⁶ "What does it profit a man if he dresses the wound beautifully, and yet loses his patient?"

This is an age of machinery, speed, steam, gas, chemicals and electricity, and not only the industrialist but most of humanity is living in an environment which subjects them to the possibility of burns from some or all of these agents. Moreover, this is a day of accident and industrial insurance, and there is a financial angle to many if not most cases of burns that places an obligation on the medical profession not only to be familiar with the most efficient methods of treatment, but also to exercise honor and rare judgment in all matters of opinions, statements and reports relative to conditions which may have brought about disability or death.

Much valuable experimental work has been done recently by Underhill et al.,^{6, 12, 13, 18} Robinson and Boyd,^{1, 2} Blalock and his co-workers^{11, 17, 27, 28, 29} and others, which has thrown helpful light on the problem of burns. Briefly, a review of their writings and reports gives the reader certain impressions which may be expressed as follows:

1. The burn itself does not present to the attending physician the most important problem in the care of the patient, inasmuch as treatment of the burned structures alone does not usually determine whether the patient will live or die, though local treatment may have much to do with the relief from the suffering of the patient.

2. There is, apparently, a substance, a toxin of unknown character, or a changed physiological condition, which is the most lethal in-

fluence associated with or resulting from burns.

3. This toxin or changed physiology, perhaps, is primarily responsible for a great variety of organic pathological changes or lesions, as gastro-intestinal ulcers,²⁰ nephritis, inflammation of the suprarenals, pulmonary and hepatic congestions and fatty degeneration of the heart muscle which complications may enhance the therapeutic problems, take the physician unawares and even endanger or take the life of the patient.

Consideration of these points presents a new conception of burns and will, we believe, indicate a new basis for a more hopeful prognosis.

It has often been said that a patient who has suffered a burn involving one sixth¹⁴ to one one third^{14, 8} of his body surface is in danger of death. If animal experimentations may be taken as an index of what takes place in human beings, it may be deduced that the extent of the wound intrinsically is not mortally important, provided the patient's system is protected from the byproducts of the burned area. As Evarts Graham¹⁹ has said, "We no longer regard a burn as a type to be dealt with by appropriate local treatment . . . but that of an injury which gives rise to a series of separate and extremely complex processes (shock, toxemia, sepsis, etc.) the most important of which are general rather than local." My clinical observation in connection with a patient who fell into a vat of boiling water, burning practically all his body surface, except his head and right arm, yet recovered, confirms such opinions. Such observations may radically change our prognostic expectancy when a burned patient is treated systemically as well as locally.

The theory of toxins produced by or associated with burns is not a new one. Hunter⁴ believed it was due to toxic bile. The nature of the toxin is still undetermined but has been referred to by various authors¹⁸ as proteoses, peptones, ptomaines, pyridine-like bodies, guanidine salts and histamine.

Robinson and Boyd, prominent advocates of this theory, believe the toxin consists of two parts, (1) "much like snake venom,"—one part thermostable and diffusible, and exerts its toxic action on the nervous system, while the other part was thermolabile and nondiffusible, and necrotic in its effects. These^{1, 2} ardent exponents of a toxin theory found in their experimentations that animals either die in the first 24 hours of "primary shock," or later of "toxic shock." Their experiments on rabbits showed that "removal of the burned skin, less than 8 hours after the animal was burned, saved the animal from all toxic symptoms; but removal subsequent to this time

* Read at the 75th Annual Meeting of the Missouri State Medical Association, Jefferson City, May 23-26, 1932.

failed to prevent the development of toxemia in the animals." Vogt found that if two animals were united by parabiosis, followed by burning of one of the animals, toxic symptoms developed in both animals unless they were separated within 12 hours.

(2) The second, and more recent noteworthy theory regarding the systemic insult inflicted by burns has been carefully and extensively worked out by Underhill, et al. Their experiments^{18, 19, 12, 6} have led them to the conviction that burned patients are not suffering from a specific toxin absorbed from burned tissue, but from a condition variously described as anhydremia, dehydration, or concentration of the blood. After carefully checking the experiments of the chief advocates^{18, 1} of the toxin theory, they conclude that¹⁸ "the postulation of a 'burn toxin' is unnecessary since the symptoms and effects of a burn may be adequately explained by the establishment of blood concentration to a degree incompatible with life."

Briefly stated some of the high lights of the anhydremia theory are:

(1) Extensive burns are attended by the loss of a large amount of fluid from the blood stream due to an increased permeability of the superficial capillaries. Blalock²⁸ found that 57 per cent of the total plasma escaped from the circulating blood stream. Experimentally, the water loss to the blood of the animal may, according to Underhill,¹² reach as much as⁶ 70 per cent (3,500 c.c. in a man of 65 Kg.) of the total blood value. Trypan blue (5 c.c. of a 5 per cent solution) injected intravenously immediately after burns showed discoloration of the fluids lost every hour the first day, except the first hour. The maximum fluid loss reaches its height in 24 to 36 hours; after that there is a diminution. The concentration of the blood thus produced, as estimated by determination of the hemoglobin⁶ (Newcomer), is dangerous at 125, while man cannot endure long at 140.

(2) The fluid lost^{13, 29} "must be regarded as blood plasma,¹² containing similar proportions of proteins and inorganic salts,"—sodium, potassium, calcium, magnesium and chlorides. Only red cells are not lost.^{6, 28}

(3) While there is marked capillary permeability, manifested by edema and oozing from the second to the twenty-fourth hour after burns, there is not a permeability to absorption during this period. Phenolsulphonephthalein is absorbed ten times more slowly from burned than from normal animals, or from the normal skin of burned animals. Strychnine in amounts that would have killed an animal in ten minutes if injected under normal skin, is without ef-

fect¹² when injected into or under the burned area. They¹² found absorption exceedingly slow for a period of five days after burns.

Briefly, then, it may be stated that "capillary permeability¹² in one direction may exist simultaneously with decreased capillary permeability in the opposite direction."

At autopsy many internal organs have been found damaged in burned individuals. Perhaps the most widely known pathological conditions are the hyperemias,¹ petechial hemorrhages and acute ulcerations,^{5, 20, 21} first known as "Curling ulcers" of the duodenum, described by Curling of England in 1842. Recent writers¹ have found such ulcers in the stomach and ileum also. Robinson and Boyd observe that "general hyperemia¹ of the abdominal organs was noted in all those cases dying within a week of the production of the burn." Ashhurst¹⁴ found the liver, spleen and lymph nodes enlarged. Hemorrhages into adrenals is described by Evarts Graham.¹⁹ There may be nephritis, with urine¹⁴ scanty, high in specific gravity, or entirely suppressed. Underhill⁶ reminds us that the kidneys are not organically changed but that impaired function lasts as long as congestion of the blood lasts and returns when concentration is removed. The lungs may be congested and "fibrinous plugs"¹ have been found in the pulmonary vessels. Fatty degeneration of the heart in animals which endured experimental burns for a week or more has been found.

Changes in the blood are marked early in certain respects. There is a definite concentration in the presence of important burns. Hemoglobin is increased, the number of white and red cells mounts and the contour of the erythrocytes is changed.³⁰ Later there is anemia. "The most striking alteration in the composition of the blood is that of the chlorides.⁶ In general, when the blood is highly concentrated the sodium chloride content is distinctly low." Robinson and Boyd¹ found non-protein nitrogen high, but concluded that it may be the result of toxic absorption rather than decreased kidney function. Blalock found no striking changes in chlorides, sugar, non-protein nitrogen, and total protein. He adds, "The fluids that escaped from the blood vessels of the injured area had approximately the same composition in all these constituents as the plasma of the blood."

I became interested in the question of vascular occlusions associated with burns by the death of a patient, 60 years of age, who had burns of moderate extent and degree on his face and hands. On the tenth day after the burn, having already been told that he could soon go home from the hospital, the patient

was taken with violent abdominal pain, and died about twenty-four hours later.

A brief autopsy, which perhaps was performed more to fulfill the letter of the law and to determine a cause of death rather than the origin of the fatal lesion, revealed gangrene of the lower half of the small bowel and the upper half of the large bowel, with thrombosis of a mesenteric vessel supplying them. The lungs, heart and aorta were not opened, though Cokkinis,³¹ in his monogram reporting 76 compiled cases of mesenteric vascular occlusion, says they are the most common source of obstructions to mesenteric arterial flow.

I have made a fairly careful review of 706 cases of mesenteric vascular occlusion, as compiled in the literature of England and America between 1904 and 1931, without finding any of them associated with burns.

In personal communication with doctors who have had large experience with burns there have come a number of interesting statements regarding mesenteric vascular occlusions.

Harry Mock²² speaks of complications of gas bacillus infection, erysipelas, bronchopneumonia, dehydration, and frequently deforming scars, but adds, "I cannot recall . . . any experience with gastric or duodenal ulcers, lesions of the adrenals, or thrombosis coincident with burns."

Carl Davis,²³ who had an extensive experience with the Western Electric Company, says, "I have had a number of cases of death following a mesenteric thrombosis with infections, which were extra-abdominal in origin, but I have never heard of this type of complication with burns."

J. H. Lewis²⁴ of the Bethlehem Steel Company who speaks of his experience with the company "since 1904, where the force employed has ranged from four thousand to ten thousand, and during that time, I have, of course, seen a great many burned cases. I have never encountered the complication of mesenteric thrombosis in a burn case."

Alfred Blaiock,²⁵ who has conducted interesting animal experimentations relative to shock and changes in blood volume, writes that he has found infarction in the kidneys . . . at autopsy following a burn. He adds, "I am sure that thrombosis of many small vessels has been noted, but I certainly am not familiar with one in which a large mesenteric vessel was occluded."

We do not contend that mesenteric thrombosis is an impossible result of burns. To date, we have not found it in practice nor in medical literature, except one case referred to in Germany which we have not been able to confirm. However, the possibility of such a deadly com-

plication should prompt the medical profession to be alert and at all times have their autopsies performed by professional pathologists in order that every possible light may be thrown on our problems.

TREATMENT

Assuming that this pathology is generally well grounded on clinical and experimental observations to date, it is fair to conclude for the sake of brevity that the treatment of major burns must be centered around the following:

A. The care of primary shock.

B. The prevention of dehydration, or auto-intoxication, or toxic shock, as we may choose to term the condition.

C. Primary dressings, and secondary care incidental to restoration of function of the burned structures.

SHOCK

A. The treatment of shock is not observed with uniformity in present day medical literature, but a few procedures are fairly well accepted:

1. The patient should be kept warm. Heat may wisely be administered externally and internally. Hot water bottles, hot salt or sand bags, electric pads, electric blankets and warm saline bath²⁶ have all been used, but we believe that the creation of a tent over the bed, within which enough electric lights are placed to bring the environment of the patient up to approximately 102 to 105 degrees F., is the most comfortable and safest for the patient and most convenient for the attendants. One precaution which should be emphasized in the application of external heat is, that patients in shock are constantly in danger of being burned because of slow circulation and because of the dull sensibility of the patient to becoming too warm. It is important also that consideration be shown the patient whose circulation is undergoing peripheral arterial changes. We have seen such patients burned surprisingly easily.

In addition to external heat, it may be emphasized that there is an advantage in administering warm fluids by mouth—tea, coffee, milk, chocolate, etc. The earlier the better. Mention is also made of the fact that normal saline, and other intravenous solutions, may be warmed to 101 F. while oral and colonic fluids may be used at a temperature of 105 to 110 degrees without detriment to the patient.

From the point of view of prophylaxis, it is always timely to bear in mind that there should be no unnecessary chilling of the patient in transferring him to the hospital, or even in dressing the burns themselves after entering

the hospital. Too much time is often consumed in dressing minor or even major burns while the patient is slipping into shock, which more certainly endangers his life. If the thoughtful and careful deductions of Underhill are correct, that absorption from burned areas does not develop for several days, time may be permitted to see the patient through the hours of "early shock" without exposing him unduly to do a local dressing. One condition, hemorrhage, which is rare in burns, contraindicates this practice. Certainly, if the patient's life is endangered by the loss of blood hemostasis should be used, but under the injunction of Murphy that we "get in as quickly as we can, and get out quicker than we got in."

2. Appropriate medication should not be neglected. Something for pain, preferably morphine, is especially indicated for the shocked patient who is conscious of his suffering. If there is a tendency for the blood pressure to sag, an appropriate stimulant should be used. Strychnine, ephedrine, atropine, digitalis, caffeine, adrenalin and pituitrin all have their advocates. Blalock,²⁸ who believes that drugs are relatively useless as compared with measures which restore blood volume, such as transfusion of blood or intravenous saline, says, "Digitalis is always harmful; strychnine is useless, epinephrine and ether uncertain, caffeine slightly beneficial, ephedrine better than any drugs studied by me." Personally, I have found ephedrine most efficacious, but it should be administered early, preferably before much of a drop in blood pressure has occurred, if possible.

3. The administration of fluid has a place even in the treatment of primary shock in burned patients. The loss of fluids begins early. Underhill admonishes that we restore fluids early, prevent concentration as it is much easier to prevent than it is to restore depleted blood to normal.

DEHYDRATION

B. When dehydration, anhydremia, concentration of the blood, or toxic shock, as the terms are used, is threatening, the administration of fluids is requisite. The index is the rise in concentration of the blood, as shown by hemoglobinometer, 125 being the point of danger and 140 usually the point of death. The use of normal saline is popular, by proctoclysis, hypodermoclysis or by intravenous administration, early, liberally, perhaps almost continuously, in urgent cases. Four to eight liters per twenty-four hours has been used with good results.

This procedure has been criticized on the basis that it may produce edema or overdilute

normal blood constituents. On the other hand, it dilutes retained toxic elements, hastens eliminations, prevents or checks concentration of the erythrocytes, and protects internal organs.

Glucose may be added to the normal saline solution for administration by proctoclysis or venoclysis, or may be given in concentrated form intravenously. The important thing is to keep up the oxidation of the patient, prevent edema and hasten elimination. The amount will be determined by blood chemistry daily or twice daily. Should it reach 150 mg. per 100 c.c. of blood insulin may be used to burn up the excess.

In patients who are nauseated, who will not retain proctoclysis, and in whom hypodermoclysis or intravenous administration may not be employed because of the extent or location of the burns, a gastric tube placed through the nostril may be employed with simplicity, convenience and marked benefit. We have seen the most gratifying results follow the use of this method, both from the point of view of correcting gastric symptoms, as nausea, vomiting, and pylorospasm, and of administering fluids.

Blood transfusions² are warmly advocated by some, both as a means of removing toxins from the system and for replenishing the depleted circulation. Inasmuch as there is a great loss of most of the solid constituents of the blood plasma as well as of the water, as has been shown by experimental studies, this procedure commends itself as strikingly beneficial even by the simplest technic. Robinson and Boyd go further. They advocate what they term² "exsanguination-transfusion,"—a procedure in which they both bleed the patient to remove the autotoxic elements and do a transfusion to replenish the blood volume from a nontoxic donor. They report eight children thus treated. All were in serious convulsive states. Five of the eight recovered.

THE BURN

C. The treatment of the burn itself should not be considered unimportant. Whenever indicated charred or devitalized structures may be removed promptly if the condition of the patient permits, or they may be removed by warm dressings or baths later.²⁶ Ointments of many kinds, watery solutions, neutral, alkaline, and acid, and no dressing at all, have been advocated and used. Tannic acid^{50, 16} solution, in 2.5 per cent to 5 per cent strengths particularly, seems at present favored with popularity on claims that it is analgesic, antiseptic, prevents absorption and limits scar formation, but we must not forget that while it works beautifully in many cases it perhaps has the

most noxious reputation of all the remedies as dangerously sealing up a wound that is infected.

Skin grafts,^{26, 27} split usually, but occasionally whole skin, will be required for the completion of healing of certain burns. Patients should not be allowed to go too long after the removal of sloughs and the establishment of granulations in waiting for the surfaces to be covered with epithelium. Beside the saving of time there is less contraction to be overcome later when grafts are applied early. In preparing for grafting we should not forget to free the wound of infection and the patient of his anemia as far as possible, if we wish to increase our successes.

The burned patient should be guarded against contractions. As far as possible, motion should be maintained or the members should be dressed in such a position that function will not be opposed by taut scar tissue when activity is begun. Early motion and early skin grafts are serviceable in preserving function. Once contractions are established one must resort to manipulation, stretching, severing, or replacing them by the use of grafts, depending on the degree of the scar formation.

CONCLUSIONS

1. In consideration of the clinical and experimental evidence available today, it seems wise that the medical profession look upon patients with major burns as presenting their chief hazard in the perverted or toxic physiological condition, centering largely, especially early, in the blood itself. Whether we favor the theory of an unknown toxin or that of a changed physiology associated with a loss of blood plasma and consequent concentration of the blood, the major indications of treatment are the same.

2. The ultimate end to be attained in the treatment of burned structures themselves no longer finds justification in merely growing skin over the lesion but in a restored serviceable function of the damaged member. The method that accomplishes this end at the earliest possible date is usually most pleasing and profitable to the patient, and indicates the greater understanding and skill in the medical attendant.

815 Shukert Building.

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TISSUE SUBSTRATE MICROCULTURE FOR TUBERCLE BACILLI

H. J. Corper, Denver (*Journal A. M. A.*, Oct. 15, 1932), gives a simple culture method for growing small numbers of tubercle bacilli from suspected specimens that are negative on microscopic examination of smears. The method designated the "tissue substrate micromethod for culture tubercle bacilli" is based on the fact that from 1 to 2 volumes of 6 per cent sulphuric acid will destroy undesirable contaminants and saprophytic acid-fast bacilli within from one half to one hour at 37 C., and that blood or egg yolk, after the sulphuric acid treatment, neutralized with an isotonic solution (1.3 per cent) of sodium bicarbonate containing 3 per cent glycerin, is a good nutrient medium for supporting the growth of small numbers of human tubercle bacilli at 37 C. In control laboratory tests and in routine empiric tests with sputums negative on microscopic examinations of smears, the simple tissue substrate microculture has revealed a high percentage of positive results for tubercle bacilli, which recommends the test for this purpose in practice.

HEADACHES OF OCULAR ORIGIN *

A. W. McALESTER, JR., M.D.

KANSAS CITY, MO.

We are perfectly aware that not all headaches are of ocular origin though a great per cent arises from irritation originating in the primary or accessory nerves associated with vision or ocular musculature. Post states that 50 per cent of a thousand new cases came complaining of headaches. The per cent depends on the type of practice one is engaged in. For instance, if an oculist has a large industrial practice naturally he will see fewer patients with headaches than the man having a large clientele of clerical workers. So figures can be quite misleading as to the number of headache cases of ocular origin one may encounter.

The pain may be superficial in the face, in the eyeballs, lids, skin and scalp. It may be deep into the antrum, orbit, skull, especially brow ache, occipital or temporal. Again, it may be referred to the neck, shoulders or back. It may be interpreted by the patient as dizziness, swaying or seeing objects of unnatural size, shape or color. It may be manifested by sleepiness, drowsiness or nausea and even vomiting.

Eye complaints may now be definitely classified as to the etiology after taking a thorough and comprehensive history, and by a careful examination. Let us start with refractive errors. The patient usually complains of headache after reading or close work. Rarely do the eyes tire, burn or sting with refractive errors. The mechanism through which a brow, temporal or generalized headache is produced is referred through to the sympathetic nervous system, if there is anything to the theory that reflex headaches are sympathetic irritation to the covering membrane of the brain, the part that sympathetic nervous system plays in spasm of the ciliary muscles should be an important part in reflex headache. Astigmatic errors head the list of refractive errors as the chief offenders. It is well known that people with large refractive errors often do not have headaches because the intra-ocular musculature does not have the strength to contract sufficiently to give good vision, therefore the patient's accommodation is not in a tonic or a contrive state, hence poor vision and no ocular headache. The physical effect of visual disturbance can cause increased gastric secretion leading to nausea and vomiting. The physiology of a person must be considered in the

actual fitting of glasses, in centering the lenses as lenses off center or an ill-fitting frame can cause as much trouble as a refractive error.

Muscular imbalance is, I believe, more frequently overlooked as a factor in headache and especially in eye fatigue, than any other etiologic entity. Auerbach, in his book, "Kaufschmerz," states that muscles are the major offenders as causes of ocular headaches. The two chief offenders are hyperphorias and exophorias. The subjective complaints elicited in a history are panoramic headache, shopper's headache, "seventh inning" headache (from a person having hyperphoria), car sickness, viewing moving objects and the sensation of dry and sandy eyes. In all such cases the total muscle imbalance should be brought out by occluding one eye for from twenty-four hours to forty-eight hours. It is not necessary to occlude an eye for four or five days for it is well known that if an eye is covered for several days it usually becomes hyperphoric. Furthermore, these vertical imbalances may vary from day to day and a single reading should not be taken as final. The case should be considered from a medical standpoint as well as the ophthalmic. Weakness of the internal recti muscles or insufficiency of convergence is by far, in our practice, the outstanding muscular imbalance which causes distress to the patient.

The patient has, as a rule, a small refractive error; that is, a plus .50 sphere or a very small astigmatism. When his muscle balance is taken for distance it may be near normal but the near balance taken at four inches and fourteen inches shows an exophoria and a deficient prism adduction power. He complains more of eyes stinging, smarting, itching red lids, and later eyeballs aching, lastly headaches. The patient further tells you that he has never had a glass with which he can read with comfort, and that he experiences very little trouble at a distance. When you ask him to look at the point of a pencil at six or eight inches for sixty seconds he frequently draws his head away before forty seconds and states it hurts him or the point blurs.

This means to me one of four things: (1) He has some local head infection, such as sinus infection; (2) his personal habits are off, such as loss of sleep; (3) he has some constitutional upset, such as tuberculosis, or (4) most common and important, he has lost the muscular tone of his ocular muscles and often has general fatigue in the afternoon and subnormal temperature. The greatest preserver of tone is the thyroid. These people are not textbook hypothyroids or permanent hypothyroids. We have checked the basal metabolism rate on a num-

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ber of these people and invariably found it minus from five to thirty. This indicated to us that they are complaining of deficient muscular tone and they are definitely helped by feeding thyroid and the use of prism exercises. These people should not have stronger glasses but fewer glasses.

Retinal fatigue is seen in movie fans and operators, sun tan enthusiasts, and people who expose their eyes to improper lighting and to both insufficient and strong lighting. The retina, as a rule, is not sufficiently swollen for the swelling to be seen with an ophthalmoscope. These two types complain of all the forementioned eye complaints.

Glaucoma, exudative conditions of the retina and intra-ocular tumors are, as a rule readily recognized by the general practitioner when he uses the ophthalmoscope. External diseases producing headache, eye-strain, nausea, fatigue, etc., are conjunctivitis, chalazions, tumors, pterygiums, the latter two distorting the shape of the eyeball. These troubles are readily picked up on external examination of the eye.

Differential diagnosis is not always easy as often several factors have to be ruled out; and it must be remembered that you may be dealing with two diseases. Things to be thought of are gastro-intestinal upsets, nasal and accessory sinus headaches, especially sphenopalatine neuralgia as the fifth nerve has distribution and reflex from its sphenopalatine ganglion to the face, teeth and orbit. Brain tumors of course take considerable study. Hysteria is frequently present in compensation cases and in people trying to create sympathy. Post-traumatic and concussions of the brain often cause muscular imbalances. The accessory neck, shoulder and back muscles are often in sympathy with the ocular muscles. Hypertension headache is very troublesome and quite hard to treat.

The treatment is seldom difficult after the diagnosis is made and is, as a rule, very gratifying. If it is a refractive error, give glasses; if it is muscular it can be treated by prism exercises or operation. In our neighborhood, muscle exercises have come to be looked upon by the laity with doubt because so many have been giving them—the elevator boys, optician, chiropractor, osteopath, as a cure for all eye ailments. When exercises are given with discretion they are very valuable in conjunction with general therapy. Do not forget that a person may suffer general muscular fatigue and only complain of his eyes because his eye muscles have to be perfectly synchronized to function properly and any upset, whether local

or general is apt to be a factor in the muscle imbalance. The thyroid function should be carefully checked where indicated by the symptoms mentioned.

Retinal lesions, as mentioned, are quite evident by examination and history, and are run down by a general physician. External diseases are recognized in the face of the patient and by external examination. The treatment is more or less well set forth in any textbook on ophthalmology.

2003 Bryant Building.

THE BACTERIOLOGICAL DIAGNOSIS OF DIPHTHERIA

RELATION BETWEEN MORPHOLOGY AND VIRULENCE OF THE CORYNEBACTERIUM

J. C. WILLETT, D.V.M.
N. NAGLE, A.B.

and
C. L. PFAU, A.B.

ST. LOUIS

In order that the laboratory diagnosis of diphtheria be of practical value to the clinician, it must be prompt and as definite as possible. Although this diagnostic procedure is one of the oldest and most helpful in use today, it is beset with many difficulties which tend to reduce the accuracy and dependability of the laboratory report when based upon microscopic results alone. The group of *Corynebacterium* is composed of a variety of types making it very difficult and very often impossible to differentiate morphologically between virulent and avirulent organisms. Attempts have been made by Gelien, Moss and Guthrie,¹ Havens,² Jordan,³ Gorham⁴ and others, to classify *Corynebacterium* morphologically with the purpose of separating the pathogenic diphtheria bacilli from the nonpathogenic diphtheroids. This paper describes the results of an attempt made to separate the diphtheroids from the diphtheria bacilli and the pathogenic diphtheria bacilli from the nonpathogenic.

Since 1924 the *Corynebacterium* seen in the routine throat and nose cultures have been classified according to morphologic types. These organisms were divided into eight types, representing the typical and atypical types of the granular, barred and solid bacilli as stained with Loeffler's methylene blue. The scheme used is a modification of Westbrook's classification.⁵ The even staining organisms were classified as A (typical) and B (atypical), the barred as C (typical) and D (atypical) and the

From the St. Louis Health Division Laboratories.

granular as F (typical) G (atypical) and E (involution forms). Infrequently, *Corynebacterium* have been found that do not fit in with this classification.

In table 1, 2,851 microscopic positive throat and nose cultures made during 1924 to 1930 are compared morphologically with the animal virulence test. The classical, long, granular bacilli which we designate as type F were virulent in 75 per cent of the cultures and type B representing the diphtheroid group in 13 per cent. The remaining types were found to be virulent in approximately 50 per cent of the cultures.

Table 1. *Relation Between Morphology and Virulence of Corynebacterium, 1924-1930*

Classification	Total Number	Number Virulent	Number Avirulent	Per Cent Virulent	Per Cent Avirulent
A	193	116	77	60.10	39.90
B	799	105	694	13.14	86.86
C	35	16	19	45.71	54.29
D	12	5	7	41.66	58.34
E	20	10	10	50.00	50.00
F	566	426	140	75.26	24.74
G	127	57	70	44.88	55.12
AB	270	69	201	25.55	74.45
AF	59	41	18	62.64	37.36
BF	36	14	22	38.88	61.12
BG	343	140	203	40.81	59.19
DE	30	14	16	46.66	53.34
EF	22	12	10	54.54	45.46
EG	33	21	12	63.63	36.37
FG	306	192	114	62.74	37.26
Total	2,851	1,238	1,613	43.42	56.58

Table 1 represents data accumulated by several bacteriologists in the rush of routine work during a period of several years. This table shows that we were able in some degree to differentiate the virulent from the avirulent *Corynebacterium*. This is particularly true of the B type which resembles *B. hoffmani* and xerosis and the F type which is the typical diphtheria bacilli. These results seemed significant enough to make a more detailed study of our types of *Corynebacterium* to determine if the bacteriologist could more accurately separate on microscopic examination certain common diphtheroids from the diphtheria bacilli and the virulent from the avirulent diphtheria bacilli.

During 1930 pure culture studies were made of B and F types of *Corynebacterium* which enabled the bacteriologist to distinguish them more readily. Table 2 summarizes the virulence tests made during 1930. The group of diph-

Table 2. *Relation Between Morphology and Virulence of Corynebacterium, 1930*

Classification	Total Number	Number Virulent	Number Avirulent	Per Cent Virulent	Per Cent Avirulent
B	134	8	126	5.97	94.03
F	139	116	23	83.46	16.54
G	78	40	38	51.28	48.72
AB	67	8	59	11.94	88.06
BG	71	28	43	39.44	60.56
FG	65	47	18	72.31	27.69
Misc.	42	21	21	50.00	50.00
	596	268	328	44.80	55.20

theroids classified as type B were more sharply diagnosed since only 5.97 per cent of the cultures showing this group were found to be virulent. The cultures showing only F type were found to be virulent in 83.46 per cent of the cultures.

During 1931 there were 182 virulence tests made on cultures showing only B types. As shown in table 3, 2 or 1.09 per cent of these were found to be virulent. The last 175 consecutive cultures showing only B types were found to be avirulent. Out of 127 cultures showing F types 102 or 80.32 per cent were found to be virulent.

Table 3. *Relation Between Morphology and Virulence of Corynebacterium, 1931*

Classification	Total Number	Number Virulent	Number Avirulent	Per Cent Virulent	Per Cent Avirulent
B	182	2	180	1.09	98.91
F	127	102	25	80.32	19.68
G	80	56	24	70.00	30.00
AB	28	7	21	25.00	75.00
BG	152	44	108	28.94	71.06
FG	66	44	22	66.67	33.33
Misc.	54	44	10	81.49	18.51
	689	299	390	43.40	56.60

Repeated virulence tests, using pure cultures in contrast to the routine field culture method, were made on the 23 cultures during 1930 showing F type and found to be avirulent while the field culture virulence test showed 4 (or 3 per cent) to be virulent. All of these strains gave fermentation reactions typical of *B. diphtheria*. Further study of these 23 avirulent strains showed that some belonged to the avirulent G type.

Thirty B type strains known to be avirulent with the routine field culture virulence test were repeated using pure cultures and were found to be avirulent. Fermentation reactions showed that all belonged to the diphtheroid group.

Since the field culture virulence test was found to be inaccurate in at least 3 per cent of the tests made on F and G types, an attempt was made to improve its performance. In the latter part of 1931 the sensitiveness of this test was increased by using a heavier suspension of the field culture. With this improved test and with our increased ability to separate the virulent from the avirulent diphtheria bacilli, we secured better correlation between our microscopic findings and our virulence test in 1932. During the first four months of 1932, out of 75 virulence tests made on F types, 97 per cent were virulent. In 47 virulence tests made on cultures showing G type, 85 per cent were virulent. In 31 virulence tests made on cultures showing miscellaneous types 38 per cent were virulent.

In 1932 our classification was modified to include three groups of *Corynebacterium*.

Group 1 includes types F, G and A that were virulent in over 90 per cent of the cultures; group 2 includes types C, D, E and some strains of G that were virulent in less than 50 per cent of the cultures, and group 3 includes type B that is known to be avirulent.

Table 4 shows the results of virulence tests for the first four months of 1932 in comparison with our present classification. Group 3 is omitted from this table since cultures showing type B are reported as negative for diphtheria. In this regard the Pickett-Thomson Research Laboratories⁶ state that the morphology of diphtheria and diphtheroids can be sharply differentiated microscopically. They suggest that photographs can be used in classifying and differentiating the pathogenic and nonpathogenic diphtheria-like organisms. Park⁷ says: "Non-toxic diphtheria-like organisms retain their characteristics under various artificial and natural conditions and they may be regarded from a public health standpoint as harmless. After thirty years of practical experience our opinion remains the same."

Table 4. *Relation Between Morphology and Virulence of Corynebacterium (First 4 months in 1932)*

Classification	Total Number	Number Virulent	Number Avirulent	Per Cent Virulent	Per Cent Avirulent
Group I	121	112	9	92.56	7.44
Group II	31	12	19	38.70	61.29
	152	124	28	81.57	18.42

CONCLUSIONS

The morphology of *Corynebacterium* seen in routine nose and throat cultures has been compared with the virulence test in over 4000 cases over a period of eight years. As the result of these comparisons the *Corynebacterium* can for practical public health purposes be divided morphologically into three groups. A small number of cultures having organisms that do not fit in with this classification and those that have very few *Corynebacterium* upon which a definite diagnosis cannot be made are reported as doubtful and another specimen is requested.

Group 1 is considered virulent and comprises 40 per cent of positive cultures. Group 2 comprising 35 per cent of positive cultures are those organisms which cannot be differentiated morphologically into the virulent and avirulent strains. Group 3 comprising 25 per cent of cultures which had previously been considered as positive are now classed as diphtheroids and are known to be avirulent.

33 Municipal Courts Building.

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STOVARSOL IN THE TREATMENT OF OCULAR SYPHILIS

WILLIAM M. JAMES, M.D.

ST. LOUIS

The treatment of ocular syphilis in its various manifestations should be one of the major therapeutic problems of the ophthalmologist if his work can justly be considered as conserving vision and preventing blindness. That the problem is extremely important is indicated by Lamb's¹ statement to the effect that optic atrophy is the most frequent cause of blindness in Kansas City and St. Louis. Since syphilis is responsible for about 75 per cent of all optic atrophy, it is obvious that the campaign against venereal disease cannot be too aggressive.

The burden of caring for the syphilitic patient with consequent ocular disease is generally shifted entirely upon the internist, dermatologist, or neurologist. Among the reasons for this willingness on the part of the ophthalmologist to turn his syphilitic patients over to these other specialists, two should be mentioned: First, a widespread belief that antisymphilitic treatment has little effect on ocular syphilis. This belief dates back to Albrecht von Graefe² who stated that antisymphilitic treatment produced virtually no result in parenchymatous keratitis and hereditary syphilis. Igersheimer³ is of practically the same opinion, and I have been told that the late Dr. A. E. Ewing held similar views. Second, a reluctance on the part of the ophthalmologist to undertake the complicated intravenous administration of drugs such as trypanamide and salvarsan. These and other factors often bring about a divided responsibility which results in a neglect of the ocular complication. The primary purpose of this communication is to call attention to a comparatively new arsenical compound which is gaining recognition in the treatment of syphilis and which greatly simplifies the treatment.

The treatment of syphilis acquired great momentum with the epoch-making discovery of arsphenamine, or 606, by Paul Ehrlich in 1909.

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From the department of ophthalmology, Washington University School of Medicine.

This compound has now been so well standardized that it can safely be administered by any physician. The chief difficulty in its administration, however, is the rather elaborate technic required for its intravenous injection. During the course of Ehrlich's experimental work with the arsenical compounds, a pentavalent compound, known as 594, was discovered which when given intravenously proved too toxic for experimental use. This compound was discarded by Ehrlich and his co-workers, but in 1921 investigators at the Pasteur Institute synthesized it and in the same year Levaditi perfected it under the name of p-Hydroxy-m acetylaminophenylarsenic acid; it is also known as "190 Fourneau." When patented it was given the name of stovarsol or acetarsone. This arsenical compound is a white, tasteless powder containing from 27.4 to 27.7 per cent of arsenic, has low toxicity and is well tolerated when taken by mouth. The fact that it can be given orally makes the drug an important one whenever it is advisable to avoid intravenous administration.

The patients selected to receive stovarsol* were those with manifest lesions, keratitis and iritis being the diseases of choice. The therapeutic procedure follows: The patient on admittance to the clinic receives a thorough general physical examination including a urine examination and a blood Wassermann and Kahn. The first three patients received only stovarsol 0.25 gm. three times a day; the subsequent cases received in addition an intramuscular injection of .020 gm. of mercury succinimide once a week. The patients reported to the clinic once a week. The tolerance to stovarsol has not been determined so no so-called "course" of treatment can be outlined.

The following nine histories illustrate the results obtained with stovarsol alone and with stovarsol and mercury:

REPORT OF CASES

Case 1. H. A., colored man, aged 21, was admitted to the clinic February 12, 1931, with a bilateral acute interstitial keratitis. Visual acuity, O. U. was 6/60. Blood Wassermann and Kahn reactions were both +++++. He was placed on stovarsol (0.25 gm. t.i.d.) for six weeks. No other antisyphilitic treatment was administered. On April 7 his vision had improved to O. U. 6/10. After a month's rest the stovarsol regimen was resumed from May 4 to July 13, at which time he had received a total of 198 tablets. Serologic tests were made at frequent intervals. Ten weeks after institution of therapy the blood Wassermann and Kahn tests were negative and have remained so during the subsequent period of observation. Vision improved from 6/60 on admission to

6/10 two months later and to 6/4 after another two months. The patient has been transferred to the municipal clinic for further treatment.

Case 2. S. W., colored woman, aged 33, was admitted to the clinic April 9, 1931, with an acute iritis of the right eye thought to be of syphilitic origin. Visual acuity was O. D. 3/60, O. S. 6/5. Blood Wassermann and Kahn reactions were both +++++. The general physical findings were essentially normal. Stovarsol was given (0.25 gm. tablets) three times a day from April 27 to May 28. She was allowed to rest for one month and then given stovarsol again from July 6 to September 17, a total of 303 tablets having been administered. The blood Wassermann was negative; the Kahn +. Visual acuity improved within the first month to 6/12 in the affected eye; five weeks later it was 6/6 and the eye was quiet. Two months later vision was 6/5 in this eye as well as in the left. This has been maintained for the last eleven months without a recurrence of the iritis.

Case 3. L. W., colored girl, aged 18, was admitted to the clinic May 20, 1931, having an acute interstitial keratitis of the left eye. Visual acuity was O. D. 6/6, O. S. 3/60. Both Wassermann and Kahn reactions were +++++. Stovarsol given (0.25 gm. tablets) three times a day after meals. Treatment was continued for eight weeks (until July 17), a total of 171 tablets having been administered and at this time vision had improved somewhat in the left eye, coming up from 3/60 to 6/60. After resting six weeks the patient returned (Aug. 29) stating that she had a rash which was pronounced by the consulting dermatologist, Dr. Clinton Lane, a mild arsenical dermatitis. For this reason no further medication was given until three weeks later when therapy was continued. Vision in the left eye had improved to 6/6-2, according to the test made after her rest period of six weeks. The Kahn reaction remained strongly positive.

Case 4. L. G., colored boy, aged 17, was admitted to the clinic October 19, 1931, with an incipient interstitial keratitis of both eyes. Visual acuity was O. U. 6/10. Blood Wassermann and Kahn reactions were both +++++. The patient was put on mercury succinimide, .020 gm., intramuscularly once a week, and stovarsol, gm. 0.25 tablets, twice a day. In spite of this the keratitis rapidly progressed until one month later the visual acuity was O. U. 1/60. Treatment was continued with intervening rest periods. To date he has received 28 injections of mercury succinimide and 400 tablets of stovarsol. Visual acuity at present is O. D. 6/10, O. S. 6/7.5. The Wassermann and Kahn reactions are +++++.

Case 5. J. C., white boy, aged 15, was admitted to the clinic September 29, 1931, having a bilateral acute interstitial keratitis. Visual acuity was O. D., hand motion at one meter, O. S., 6/12. The blood Wassermann and Kahn tests were both +++++. He was given mercury succinimide, .020 gm. intramuscularly once a week, and stovarsol, 0.25 gm. tablets, twice daily. Four months later the blood Wassermann and the Kahn tests were negative. On April 15, 1932, vision was O. U. 6/12. A total of 27 injections of mercury and 276 tablets of stovarsol were administered.

Case 6. O. S., colored girl, aged 18, was admitted to the clinic November 11, 1931, with a recurrent interstitial keratitis, the first attack having occurred two years previously. Blood Wassermann and Kahn reactions were both +++++. Vision was O. D., counts fingers at 50 cm., O. S. 6/60. She was given mercury

*Through the courtesy of Merck and Company we were given a considerable supply of stovarsol to use in treating these cases.

succinimide, .020 gm. once a week, and stovarsol, 0.25 gm. tablets twice daily, for 16 weeks. There has been a marked improvement in visual acuity to O. D. 6/20, O. S. 6/12. A total of 16 mercury injections and 168 stovarsol tablets were administered.

Case 7. F. M., white man, aged 39, was admitted to the clinic February 12, 1932, with a recurrent dendritic keratitis of the left eye. The onset of this disease had occurred three years previously coincidental with malarial therapy for general paresis. The present attack was of two weeks' duration and the patient was in an extremely poor general condition. Blood Wassermann and Kahn reactions were negative. Vision O. D. 6/12, O. S. 1/120. Test of the spinal fluid gave a Wassermann + and Kahn -. There were 10 lymphocytes per cubic millimeter; the Pandy test was +, and the colloidal gold curve, 5544552110. This patient was an inmate of Barnes Hospital from February 12 to 25, but local therapy to the eye in addition to a tonsillectomy failed to alleviate the symptoms. On February 26, mercusol, .025 gm. intravenously once a week, and stovarsol, 0.25 gm. tablets twice a day, were started. Improvement was noted subjectively during the first 72 hours and has steadily continued. April 15 the vision was O. D. 6/5, O. S. 6/60. The cornea is superficially very much scarred. He has had 11 mercury injections and 84 tablets of stovarsol.

Case 8. L. R., colored man, aged 23, was admitted to the clinic February 12, 1932, with a severe uveitis of the right eye. Blood Wassermann and Kahn reactions were each +++. The visual acuity was O. D. 6/60, O. S. 6/6. The patient was placed on mercury succinimide, .020 gm. intramuscularly once a week, and stovarsol, 0.25 gm. tablets twice a day,

for ten weeks. On the 15th of April the visual acuity was O. D. 6/10, O. S. 6/6. The deposits on the corneal endothelium on admission were heavy and greasy looking. They have cleared so much that now they are not perceptible without the aid of magnification. A total of 10 injections of mercury and 120 tablets of stovarsol has been given.

Case 9.* N. G., white girl, aged 3, was admitted to the clinic January 26, 1932, because of pain in the right tibia. Diagnosis, congenital syphilis. The blood Wassermann and Kahn reactions were +++. The child received bismocymol $\frac{1}{2}$ c.c. intramuscularly once a week. On February 25, 1932, a bilateral acute interstitial keratitis was noted. Bismocymol was continued $\frac{1}{2}$ c.c. once a week until April 12 without any appreciable change in the interstitial keratitis. Since May 6, 1932, the patient has been receiving stovarsol, 0.12 gm. twice a day. A total of 126 tablets, or 31.5 gms., has been administered up to the present time (August 8, 1932). There has been a complete recovery from the keratitis, and the Wassermann reaction was negative on August 5, 1932. The visual acuity was not obtainable because of the patient's age.

SUMMARY

The results obtained serologically were especially gratifying. Eight of the cases presented a strongly positive blood Wassermann reaction at the institution of treatment; in five, the Wassermann became negative in from nine to thirty-two weeks, the average being nineteen and two fifths weeks. The improvement in

*Added since this paper was read.

Table 1. Vision Without Correction

Case	Age	Sex	Ocular Diagnosis	Treatment				Drugs Used	Duration	Blood Serology	
				Before		After				Before Treatment	After Treatment
				O. D.	O. S.	O. D.	O. S.				
1	21	M	Interstitial keratitis O. U.	6/60	6/60	6/4	6/4	Stovarsol	16 weeks	Wassermann++++ Kahn++++	Wassermann – Kahn –
2	33	F	Iritis O. D.	3/60	6/5	6/5	6/5	Stovarsol	13 weeks	Wassermann++++ Kahn++++	Wassermann – Kahn +
3	18	F	Interstitial keratitis O. S.	6/6	3/60	6/6	6/6-2	Stovarsol	8 weeks	Wassermann++++ Kahn++++	Wassermann++++ Kahn++++
4	17	M	Interstitial keratitis O. U.	1/60	1/60	6/10	6/7.5	Stovarsol and mercury suc- cinimide	42 weeks	Wassermann++++ Kahn++++	Wassermann++++ Kahn++++
5	15	M	Interstitial keratitis O. U.	HM 1 m.	6/12	6/12	6/12	Stovarsol and mercury suc- cinimide	26 weeks	Wassermann++++ Kahn++++	Wassermann – Kahn –
6	18	F	Interstitial keratitis	CF 0.5 m.	6/60	CF 3 m.	6/20	Stovarsol and mercury suc- cinimide	16 weeks	Wassermann++++ Kahn++++	Wassermann++++ Kahn++++
7	39	M	Dendritic ker- atitis follow- ing malarial therapy of paresis	6/12	1/120	6/5	6/60	Stovarsol and mercury suc- cinimide	8 weeks	Wassermann – Kahn – **	Wassermann – Kahn – **
8	23	M	Iridocyclitis, right eye	6/60	6/6	6/6	6/6	Stovarsol and mercury suc- cinimide	9 weeks	Wassermann++++ Kahn++++	Wassermann – Kahn –
9	3	F	Interstitial keratitis O. U.	Unable to secure visual acuity				Stovarsol only	32 weeks	Wassermann++++ Kahn++++	Wassermann – Kahn +

Legends: H. M. = hand motion.
C. F. = counts fingers.
** = spinal fluid.

function expressed in terms of visual acuity was equally gratifying: In only one case,⁶ which was a recurrent keratitis, was there a residual impairment of vision sufficient to cause industrial handicap. The tolerance to stovarsol exhibited in this series of cases was extremely high. It is difficult to evaluate specifically the results of treatment in so small a group as this but in general it may be said that results are as good as those obtained when arsenical compounds are given intravenously. The reports of Cregor and Gastineau,⁴ of Mettel⁵ and of Rosenbaum⁶ in this country are so favorable that the use of stovarsol is being continued.

824 Metropolitan Building.

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PHYSOSTIGMINE, A PERISTALTIC STIMULANT

According to P. F. Butler and Max Ritvo, Boston (*Journal A. M. A.*, Oct. 15, 1932), physostigmine increases gastric tonus and peristalsis. This drug is of great benefit in the roentgen examination of the stomach in patients with absent or sluggish peristalsis, marked atonicity or spasm. Physostigmine enables the roentgenologist to complete his studies of the stomach in a much shorter time and with a greater degree of accuracy in the aforementioned types of cases. The average dosage is 1/25 grain (2.6 mg.) orally, the drug being effective when given by mouth. This obviates the need of injection methods. The administration of physostigmine does not, as a rule, interfere with the routine roentgen studies of the gastro-intestinal tract. Reactions are but rarely encountered, and since atropine is a physiologic antidote to physostigmine, toxic manifestations are controlled without difficulty.

CLINICAL PARTITION OF BLOOD PROTEIN

William G. Exton and Anton R. Rose, with the assistance of Fred Schattner, Frances Edel and Mary McCarthy, Newark, N. J. (*Journal A. M. A.*, Oct. 8, 1932), discuss the underlying principles and, a simple clinical method for determining blood proteins has been outlined. As constituted at present, the system includes total protein, albumin, globulin and fibrinogen, three albumin and four globulin subfractions, and protease and glycoprotein. The method is adapted to the study of metabolic, serologic, immunologic, enzymatic and similar phenomena involving proteins and applicable to transudates and other body proteins. Determinations on twenty normal and eighty pathologic specimens of blood are reported in a preliminary way to illustrate the practicability of the procedure for clinical routine and study.

AFTER-CARE OF THE INJURED

W. L. Estes, Jr., Bethlehem, Pa. (*Journal A. M. A.*, Oct. 8, 1932), lays stress on the important and essential part the patient and his mental attitude play in the recovery from an injury, but does not overlook or minimize the need for prompt and skilful surgical procedure. Rather, his intention is to indicate what may be the weak links in the chain of treatment. It is pointed out that the patient himself must be taught to realize that the regaining of function is *his* job, and that it can be accomplished by persistent active use of the injured part, aided by physical therapy. Proper psychotherapy to avoid and prevent the neuroses of injury must be practiced, and early return to work is the best occupational therapy and does much, and, perhaps, most, to effect the complete and final restoration of function.

TREATMENT OF MALIGNANT TUMORS

Charles L. Martin, Dallas, Texas (*Journal A. M. A.*, Nov. 5, 1932), believes that modern developments in radium therapy are based on two facts: first, that radiation of great penetrating power and short wavelength has less necrotizing effect and a greater selectivity for radiosensitive cells than radiation of low penetration and long wavelength, and, second, that the selectivity of radiant energy for radiosensitive cells is increased when the duration of the exposure is increased with a corresponding decrease in intensity. The implantation of multiple heavily filtered radium needles of low strength over long periods of time increases the margin of safety for normal tissue and causes the rapid regression of malignant tumors of a relatively high grade of radioresistance without sloughing.

HEMOPHILIA

During the last two years Carroll Lafleur Birch, Chicago (*Journal A. M. A.*, Nov. 5, 1932), has had an opportunity to study thirty-five persons with hemophilia. They range in age from newly born to 52 years. Seven of these cases were sporadic, while twenty-eight had a definite family history. The author has traced the histories of twenty families which consist of from four to seven generations. An analysis of these histories shows that persons with hemophilia have more daughters than sons, while transmitters have more sons than daughters. Over 71 per cent of the transmitters' sons had hemophilia. Only from 10 to 15 per cent of the transmitters' daughters had at least one normal son and no hemophiliac sons. Of the hemophiliac daughters, only from 3 to 7 per cent had at least one normal son and no hemophiliac sons. Nineteen patients have been receiving ovarian therapy for more than six months. Nine of these showed a good response, and nine showed definite but less marked improvement, while the condition of one remained unchanged. The response was both general and specific. The general improvement was shown by an increase in weight hemoglobin and vitality. The specific response was shown by a decrease in number and severity of the hemorrhages and a lowering of the coagulation time. The prolongation of the coagulation time in hemophilia is due to increase in the resistance of the blood platelets, for when this resistance is overcome mechanically, the blood clots in normal time. When certain ovarian preparations are added to hemophiliac blood in a test tube, the coagulation time is decreased to one fourth or one half the time of the untouched control.

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JANUARY, 1933

EDITORIALS

COLLECTION OF FEES FOR EMERGENCY SERVICE

The Economic Survey Committee of the St. Louis Medical Society presented an exhaustive report to the Society at the meeting of December 13 on "Automobile Accidents and Emergency Treatment." In this report which was adopted by the Society the committee recommended that the Society request the Missouri State Medical Association to draft a bill for introduction in the 1933 session of the legislature with the view of providing a reasonable assurance of the payment of fees of physicians and hospitals for services rendered in emergencies growing out of automobile accidents. The committee proposed that this protection take the form of a lien upon any moneys received by the person responsible for the accident as payment of liability damages.

The introduction of such a bill in the legislature was one of the major recommendations of Dr. J. F. Harrison, Mexico, in his presidential message to the House of Delegates at the Jefferson City Session of our Association in 1932 and the Committee on Public Policy was instructed to draft such a bill and introduce it in the 1933 session of the legislature. The action of the St. Louis Medical Society will materially strengthen the movement and its cooperation with the State Association committee will be invited.

Lien laws to protect physicians and hospitals have been adopted in six states, viz., Delaware, Montana, Nebraska, New Jersey, Oregon and Virginia. Montana and Nebraska are the only states in this group that mention physicians, nurses and hospitals as entitled to liens. The other states limit the liens to hospitals "supported in whole or in part by private charity" in Delaware; "supported in whole or part by private charity or maintained by municipal

county board" in New Jersey; "hospitals" in Oregon, and "in hospitals public or private" in Virginia. During 1931 lien laws were introduced in the legislature of ten other states but the bills failed of passage. Nebraska was the first state to adopt the lien law in behalf of physicians and hospitals; this was done in 1927. It was not until 1931 that the attempt to pass lien laws was renewed and in that year Delaware, Montana and Oregon adopted the law, Virginia following with the adoption of the law in 1932. It is quite probable that the effort will be made to pass lien laws in many of the legislatures in 1933 sessions.

Compensation for injuries sustained in motor vehicle accidents has been under consideration by various state legislative bodies in the last few years. A number of states have enacted financial responsibility laws (not lien laws). These laws have been designed in part to increase gradually the number of financially responsible owners and drivers by requiring those who have been responsible for accidents to be insured. Massachusetts has a compulsory liability law requiring all motor vehicle owners to be covered by insurance against liability for personal injuries.

In compensation for injuries the question of how people meet the expenses caused by motor vehicle accidents looms large and of course depends upon whether the injured person was struck by an insured motorist or by one who was not insured. The report of a committee to the Columbia University Council for Research, February 1, 1932, says a study of cases not covered by insurance indicates that the injured person has about one chance in four of receiving some payment and that in most cases the payments will not cover the losses sustained. It is very evident therefore that when the person responsible for the accident is not insured the physician or hospital has a very remote chance of collecting fees for services. However, "if the offending motorist is insured" says the report just mentioned, "payment will be received in 85 per cent of the cases." Again, since only about 33 1/3 per cent of all motor vehicles are insured it is evident that the chance for collecting the fees in all cases is materially reduced. The committee of the St. Louis Medical Society found no information concerning surveys made by other medical societies relating to this problem but recently in Philadelphia thirty-five hospitals were surveyed, eighteen reporting data covering 688 cases treated in 1929. Sixty-two per cent of these cases received free treatment. Bills were rendered in 259 of the 688 cases and 50 per cent of these remained unpaid at the

end of one year. In 1930 the Ohio Hospital Association made a canvass of automobile accident cases in that state and found that the hospital bills resulting therefrom amounted to \$810,489.14 and of this amount 50 per cent proved uncollectible. In New Jersey a study of highway accident cases treated in nineteen hospitals showed a total of 1781 patients with 22,400 hospital days and bills amounting to \$106,089. Of this amount 56 per cent was collected and hope has been abandoned of any further collections on these accounts. It can be reasonably assumed that the percentage of loss to the physicians treating these cases was even greater than the losses to the hospitals.

The St. Louis Safety Council has tabulated 7732 accidents with 8542 persons injured and 929 killed in Missouri in 1931. In St. Louis during the first eight months of 1932 ending August 31 there were 5340 automobile accidents with 2828 persons injured. The City Hospital treated 1405 of the cases and 255 were treated in private hospitals. Of the 1405 treated at the City Hospital 800 received only first aid and 605 were hospitalized. Of the 255 treated in private hospitals 78 received first aid only and 177 were hospitalized. Thus it will be noted that the City Hospital takes care of approximately four times the number that are treated in all private hospitals combined.

A questionnaire was sent to the registered hospitals in Missouri and to members of the St. Louis Medical Society asking for data on payment of fees for services rendered to persons injured in automobile accidents. Where liability was covered by insurance 44 per cent of the answers from members indicated satisfactory experience and 56 per cent replied that bills were usually paid but in many instances they were compelled to accept reductions. Where liability was not covered by insurance 25 per cent received payment in one half of the cases and 75 per cent received little or nothing for their services. In cases where judgment for damages was later awarded 27 per cent usually received their fees; 33 per cent said collection depended entirely upon the cooperation of the attorney, and 40 per cent stated that in addition to the long wait there was a very poor chance of collecting the fee. Hospitals reported similar experiences.

It frequently has been suggested that compulsory liability insurance is the solution to the entire accident problem but this type of legislation is opposed because it requires the insurance companies to accept many very undesirable risks. In Massachusetts, the only state having such a law, the tendency is to increase litigation with consequent congestion of court dockets.

The committee on economics concluded that legislation making the fees of a physician or hospital for services in such emergencies a lien on any money received as liability damages by the party responsible for the accident is the best means of protecting the physician and hospital and recommended the introduction of such a bill at the next session of the legislature.

The economic survey committee endorsed the driver's license and safety-responsibility law as advocated by the Automobile Club of Missouri. The proposed law requires a driver's license for every one over sixteen years of age and that every offending driver brought under the penalties of the law must pay the damages or forfeit the right to drive.

POSTURE THERAPY

Man, by rising from the quadruped to the biped and from instinct to reason concomitantly advanced himself from the lower stratum of animal life to a high civilized human race. By means of the upright posture he has increased his field of vision, his freedom of hands and arms and developed a highly specialized brain. This change of posture has, however, not been accomplished without considerable disadvantage, a disadvantage that reflects itself markedly in the efficiency and well-being of the individual.

The human body is an intricate, finely adjusted machine the parts under normal conditions being closely correlated to operate with the least amount of energy. The top-heavy trunk resting upon a relatively narrow base must be well balanced in order to avoid constant and undue strain. This condition depends, so far as the body mechanism itself is concerned, mainly upon the proper position of the various parts as related to each other and the correct functioning of the neuromuscular apparatus. In a perfectly poised standing position the various segments are so balanced that comparatively little effort is required to maintain it. When this normal posture is disturbed an unnatural strain is imposed upon muscles of the legs and back, fatigue readily sets in and a general lowering of tone and body efficiency follows.

Gynecologists, pediatricians and orthopedists are aware of the importance of poor posture as an entity in a train of symptoms and the general practitioner is becoming more cognizant of poor body mechanics as a factor in general physical debility. The difficulty in treating poor posture in the past arose from the theory that it was per se the result of weak muscles which could be corrected only by a considerable amount of daily exercise.

The modern theory reverses this picture by recognizing poor posture as primarily the result of acquired improper muscle habits. Physical therapists therefore concluded that the old school which taught the necessity of daily and hourly "gymnastics" was wrong; that the point to be emphasized in the correction of poor muscle habits is to assume the correct posture many times during the day, which in itself may be regarded as the best posture exercise. Only in this way do we achieve the correct posture of the body to foster full vigor and health, prevent waste of energy and inculcate confidence and assurance.

PAPERS FOR 1933 SESSION

Members desiring to read papers at the Kansas City Session of the Association in 1933 are invited to send the titles to the Committee on Scientific Work at their earliest convenience. Members in Kansas City should address Dr. James E. Stowers, 915 Professional Building, a member of the committee in that city; members in St. Louis are requested to send their titles to Dr. Robert F. Hyland, 3901 Park Avenue. Members in other parts of the state should address their requests with the title of their papers to Dr. E. J. Goodwin, 1023 Missouri Building, St. Louis.

It is a rule of the Committee on Scientific Work that preference will be given to members who have not contributed articles to the program during the last two years.

CORRECTING DISORDERS OF SPEECH

Physicians and educators from all over the country gathered in St. Louis, November 25 and 26, to consider the problems of persons who have defective or disordered speech. The seventh annual meeting of the American Society for the Study of Disorders of Speech and the first annual convention of the National League for the Rehabilitation of Speech met in a joint session. It was the first national convention devoted wholly to problems of disordered speech ever held in this country. Representatives from twenty-one states and fifteen universities attended.

Special features of the program were an authoritative presentation of speech work and organization in Europe; a new etiologic conception of the nature of stammering; an account of the activity in the speech field of California, the most active state in the United States; the adoption of classifications of deficiencies of fusion and causes of defective vision and of disorders of speech, and a demon-

stration of various apparatus used in the phonetic laboratory of the Central Institute for the Deaf, St. Louis. Addresses included medical treatises on the etiology and treatment, and pedagogical studies of educating, the handicapped child.

NEWS NOTES

The Mississippi Valley Dermatological Society will meet in Kansas City, Missouri, on January 16.

A free tuberculosis clinic is being held each Thursday at the University of Missouri Hospital at Columbia.

Dr. Jabez N. Jackson, Kansas City, was appointed director of health in Kansas City on December 19 to succeed Dr. Calvin L. Cooper who died December 1.

Dr. Lawrence C. Kolb, Washington, D. C., has been appointed superintendent of the Federal Hospital for Mental Delinquents at Springfield, Missouri.

Dr. Frank Hurwitt, Kansas City, Missouri, was elected president of the Mid-Western Society of Anesthetists at the Congress of Anesthetists held in New York in September.

Dr. J. Curtis Lyter, St. Louis, was the guest of the Macaupin (Illinois) Medical Society at Carlinville, Illinois, November 22, and spoke on "The Clinical Aspects of Avitaminosis."

Dr. A. Morris Ginsberg, Kansas City, recently delivered an address on "The Electrocardiogram" before the Lyon County (Kansas) Medical Society, at Emporia.

The State Board of Health will hold an examination of applicants for license to practice medicine in Missouri at Jefferson City, January 2 and 3, 1933, in the Senate Chamber of the Capitol.

Drs. Wenzel C. Gayler and Paul R. Nemours of St. Louis addressed the Bond County (Illinois) Medical Society at a meeting in Greenville, Illinois, December 16. Dr. Gayler spoke on "Indications for Cesarean Section." Dr. Nemours spoke on "Classifications of Urinary Obstructions."

Dr. Harvey Jennett, Kansas City, was appointed superintendent of the Kansas City General Hospital on November 21. Dr. Jennett fills the vacancy created by the death of Dr. Porter E. Williams.

Dr. W. T. Coughlin, St. Louis, presented a paper entitled "Hemorrhage After Operations on the Biliary Tract, with Interesting Case Reports" before the meeting of the Western Surgical Association in Madison, Wisconsin, December 9 to 10.

A clinic on "Pathological Movements" was presented by Drs. H. Unterberg, W. J. Doyle and E. F. Sassin, of St. Louis, at the annual meeting of the St. Louis Neuropsychiatric Society December 19 at the St. Louis Medical Society building.

Dr. John Zahorsky, St. Louis, has been elected president of the Bethesda Hospital of St. Louis. He will fill the unexpired term of Mrs. J. Herndon Smith whose resignation was submitted on the advice of her physicians because the physical strain of the position was causing her ill health.

Drs. M. A. Bliss and H. I. Spector, St. Louis, addressed the annual meeting of the Tuberculosis and Health Society of St. Louis November 28. Dr. Bliss spoke on "Nutrition From the Modern Viewpoint," and Dr. Spector discussed "The Tuberculosis Situation in St. Louis."

Dr. Eugene A. Scharff, St. Louis, superintendent of the St. Louis County Hospital, on December 6 tendered his resignation from that position effective December 31. Dr. Scharff has headed the hospital since the new building was completed in April, 1931, and is withdrawing from the superintendency because of ill health.

Three members of the faculty of the St. Louis University School of Medicine presented a scientific program before the Lee County (Iowa) Medical Society at Fort Madison, Iowa, December 15. Dr. William E. Leighton presented a paper on "Cancer on the Lip"; Dr. A. A. Werner discussed "The Effect of Theelin Upon Female Castrates," and Dr. H. H. Kramolowsky spoke on "Urological Diagnosis." Dr. Ralph A. Kinsella was scheduled to speak on "Vascular Disease in Middle Life" but illness prevented him from attending the meeting.

Dr. Richard L. Sutton, Jr., Kansas City, delivered an address before the Craig County (Oklahoma) Medical Society at Vinita, Oklahoma, November 22. Dr. Sutton's subject was "Diagnosis and Treatment of Cancer of the Skin."

Dr. E. M. Frommer, St. Joseph, has been notified by the Hungarian Society of Pathology that he has been awarded the society's Schoenlein prize medal for 1932 for outstanding research work in cancer. While in Europe about a year ago Dr. Frommer submitted a treatise to the Society entitled "The Role of Metaplastic Changes in the Pathology of Cancer."

The American Association for the Study of Goiter, for the fourth time, is offering a \$300 award for the best essay based upon original research work on any phase of goiter. The essay is to be presented at the annual meeting of the Association to be held in Memphis, Tennessee, May 15 to 17. Two honorable mentions will go to those presenting the second and third best essays.

Dr. A. W. Adson, Rochester, Minnesota, head of the neurological section of Mayo Clinic, was the guest of the Kansas City Southwest Clinical Society and the Jackson County Medical Society at Kansas City on December 23. In the morning Dr. Adson lectured on "Problems in Neurological Surgery," and in the evening on "Trigeminal Neuralgia: Differential Diagnosis and Treatment."

Dr. Joseph Grindon, St. Louis, addressed the Missouri Historical Society in St. Louis, December 5, on "Some Old Medical Teachers." Dr. Grindon restricted his talk to a discussion of the older physicians who taught in the medical schools of St. Louis during the latter quarter of the nineteenth century. Dr. Grindon had known personally all but two of the men he discussed.

Anecdotes, life histories and outstanding characteristics and accomplishments of this group were told. The teachers discussed were: Drs. William M. McPheeters, James W. Clemens, John Thompson Hodgen, Elisha H. Gregory, Paul Yoer Tupper, John J. McDowell, J. S. B. Alleyne, John B. Johnson, Elsworth Faissoux Smith, Henry H. Mudd, Louis Charles Boisliniere, Gustav Baumgarten, Theodore F. Prewitt, Timothy Loisel Papin, Paul G. Robinson, Charles Alonzo Todd, Charles O. Curtman and Algernon S. Barnes, Sr.

Dr. Richard L. Sutton, Kansas City, presented an address at the annual meeting of the Atchison, Topeka and Santa Fe Railway Surgeons' Association, held in Topeka, Kansas, December 5. In the evening he spoke before the Shawnee County Medical Society and the Woman's Auxiliary. On December 16, Dr. Sutton spoke before the Sedgwick County (Kansas) Medical Society at Wichita.

The appointments to the autopsy staff of Frank P. Furlong, newly elected coroner of St. Louis, have been completed. The staff of nine physicians is composed of Drs. William J. Doyle, Ralph L. Thompson, Downey L. Harris, Eugene J. O'Malley, J. F. J. Nawrocki, E. C. O'Brien, John J. Connor, O. S. McClellan and L. A. Brandenburger. Coroner Furlong has announced a new policy of having autopsies performed at the hospital where the patients die when legally possible so the interns may benefit from the proceedings.

Dr. Evarts A. Graham, St. Louis, was presented with the Southern Medical Association's research medal at the annual meeting of the association held in Birmingham, November 16 to 18. The award has been made but three times in the last twenty years. The medal was awarded to Dr. Graham in recognition of outstanding work in diagnosis and pathology of inflammatory diseases of the gallbladder and the liver.

Dr. Graham has received a gold medal from the American Radiological Society, the Leonard prize of the American Roentgen Ray Society, the Gross prize in surgery and in 1929 he was awarded an honorary degree by Princeton University.

The United States Civil Service Commission announces open competitive examination for junior medical officer. Applications must be on file with the United States Civil Service Commission at Washington, D. C., not later than January 10. The examination is to fill vacancies in Saint Elizabeth's Hospital, Washington, D. C. Two types of internships are offered, an accredited internship of two years and a postgraduate internship in psychiatry of one year. Applicants will not be required to report for examination at any place but will be rated on their education, training and experience. Full information may be obtained from the secretary of the Civil Service Board of Examiners at the post office or customhouse in any city or from the United States Civil Service Commission, Washington, D. C.

Dr. Virgil W. McCarty, Kansas City, has been elected president of the staff of St. Luke's Hospital, Kansas City, for the third successive term. Other officers elected were Dr. Francis E. Wilhelm, vice president, and Dr. Ralph Wilson, secretary and treasurer.

Dr. Richard L. Sutton, Kansas City, well-known dermatologist, big game hunter and explorer, delivered an address before a joint meeting of the Greater St. Louis Museum of Natural History and the St. Louis Medical Society, December 20, at the Medical Society auditorium. The address was illustrated by more than 200 lantern slides made from original photographs taken by Dr. Sutton and his party on a recent trip to the Arctic. Dr. Sutton was accompanied on the trip by his son, Dr. Richard L. Sutton, Jr., and daughter, Miss Emmy Lou Sutton, a student at the University of Kansas.

The following speakers responded to invitations from the Postgraduate Committee of the State Association to deliver addresses at recent meetings of component county medical societies:

Drs. L. H. Jorstad and Richard S. Weiss, of St. Louis, were the guests of the Adair County Medical Society at Kirksville, December 1. Dr. Jorstad spoke on "Cancer of the Lip, Early Diagnosis and Treatment," and Dr. Weiss read a paper on "Precancerous Dermatoses."

Dr. Sam H. Snider, Kansas City, was the guest of the Buchanan County Medical Society at St. Joseph, November 30, and spoke on "Modern Methods in Control of Tuberculosis."

The Five County Medical Society had as its guests at Bernie, December 6, Drs. A. A. Werner and Myron Davis, of St. Louis. Dr. Werner addressed the members on "Amenorrhea in Young Women; Cause and Treatment," and Dr. Davis spoke on "Menorrhagia at the Menopause; Its Significance and Treatment."

At the November 29 meeting the Jasper County Medical Society had as its guests at Joplin Dr. Herbert L. Mantz, Kansas City, who spoke on "Tuberculosis, an Infectious Disease." On December 6, Dr. W. W. Duke, Kansas City, was the guest of the Society at Joplin and spoke on "The Dawn of a Specialty in Medicine."

Dr. Norman Tobias, St. Louis, was the guest of the Jefferson County Medical Society at Festus on November 22 and delivered an address on "The Extra-Genital Chancre."

The Vernon-Cedar-Bates County Medical Society had as its guests at Nevada, December 1, Drs. M. Pinson Neal and D. A. Robnett, of Columbia. Dr. Neal read a paper on "The

Leukocyte Count as an Aid in Diagnosis and Prognosis," and Dr. Robnett spoke on "Skin Cancers, Their Recognition and Treatment."

Drs. David S. Dann and Laurence Jones, of Kansas City, were the guests of the Nodaway County Medical Society at Maryville, November 1. Dr. Dann spoke on "X-Ray Studies of the Spine," and Dr. Jones spoke on "Intracapsular Fractures of the Neck of the Femur: An Original Method of Treatment."

Drs. J. W. Larimore and A. O. Fisher, St. Louis, were guests of the St. Francois-Iron-Madison County Medical Society at Farmington, November 30. Dr. Larimore spoke on "Diseases of the Right Colon and Their Differential Diagnosis" and Dr. Fisher spoke on "Surgery of the Gallbladder and Related Conditions."

Drs. Charles H. Neilson, Fred Bailey and Alphonse McMahon, St. Louis, were the guests of the Ninth Councilor District at Columbia on November 1. Dr. Neilson spoke on "Some Points in Differential Diagnosis"; Dr. Bailey discussed "Idealism in Medicine and Surgery," and Dr. McMahon spoke on "The Endocrines and Their Relation to Internal Medicine."

The following articles have been accepted for New and Nonofficial Remedies:

Lakeside Laboratories, Inc.

Ampoules Dextrose (d-Glucose) 25 Gm., 50 c.c.

Lederle Laboratories, Inc.

Neocinchophen—Lederle

Tablets Neocinchophen—Lederle, 5 grains
Mead Johnson & Company

Mead's Viosterol in Halibut Liver Oil 250 D
H. A. Metz Laboratories, Inc.

Tablets Novocain, 1 grain

Tablets Novocain 0.01 Gm. with L-Suprarenin Synthetic Bitartrate 0.2 mg.

Ampules Novocain Solution 2 per cent with L-Suprarenin Synthetic Bitartrate, 1 c.c.

Ampules Novocain Solution 2 per cent with L-Suprarenin Synthetic Bitartrate, 3 c.c.

Ampules Novocain Solution 2 per cent with L-Suprarenin Synthetic Bitartrate, 5 c.c.

Ampules Sterile Crystals Novocain for Spinal Anesthesia, 50 mg.

Ampules Sterile Crystals Novocain for Spinal Anesthesia, 100 mg.

Ampules Sterile Crystals Novocain for Spinal Anesthesia, 120 mg.

Ampules Sterile Crystals Novocain for Spinal Anesthesia, 150 mg.

Ampules Sterile Crystals Novocain for Spinal Anesthesia, 200 mg.

Ampules Sterile Crystals Novocain for Spinal Anesthesia, 300 mg.

Ampules Sterile Solution Novocain 20 per cent, 5 c.c.

Ampules Sterile Solution Novocain 20 per cent with L-Suprarenin Synthetic Bitartrate, 5 c.c.

Ampules Novocain Solution 1 per cent, 2 c.c.

Ampules Novocain Solution 1 per cent with L-Suprarenin Synthetic Bitartrate, 2 c.c.

Ampules Novocain Solution 1 per cent with L-Suprarenin Synthetic Bitartrate, 6 c.c.

Ampules Novocain Solution 2 per cent with L-Suprarenin Synthetic Bitartrate, 1 c.c.

Ampules Novocain Solution 2 per cent with L-Suprarenin Synthetic Bitartrate, 3 c.c.

Novocain and L-Suprarenin Synthetic Bitartrate Hypodermic Tablets "K"

Ampules Ephedrine-Novocain Solution, 1 c.c.

Riedel-de Haen, Inc.

Nostal

Nostal Tablets, 0.1 Gm. (1½ grains)

OBITUARY

C. FREDERICK PFINGSTEN, M.D.

Dr. C. Frederick Pfingsten, St. Louis, a graduate of St. Louis College of Physicians and Surgeons, 1898, died of heart disease at his home, November 20, aged 57 years.

Dr. Pfingsten was born in St. Louis and received his preliminary education in public and private schools in that city and academic work at Beloit College, Beloit, Wisconsin. Following his graduation in medicine he engaged in general practice in medicine and surgery in St. Louis for eight years. In 1906 he took postgraduate work in the University of Berlin in ear, nose and throat diseases and followed this by study at the clinics in Vienna. In 1909 he returned to St. Louis and engaged in the practice of his specialty. At the time of his death he was associate professor of otolaryngology at St. Louis University School of Medicine.

He was a member of the St. Louis Medical Society and was its treasurer in 1920 and 1921 and a member of the council for several years. He was chief of the department of otolaryngology of St. John's Hospital and was a member of the staff of the Shriners' Hospital for Crippled Children. Other medical affiliations included fellowships in the American Medical Association and the American College of Surgeons, and membership in the State Association, the American Academy of Ophthalmology and Otolaryngology and the St. Louis Ear, Nose and Throat Club. He was a member of the official board of Grace Methodist Church and the advisory board of the Security

National Bank and was active in Masonic affairs.

He is survived by his widow, Mrs. Lillian Pfingsten, two daughters and one son.

WILLIS G. JONES, M.D.

Dr. W. G. Jones, Sedalia, a graduate of the Beaumont Hospital Medical College, 1897, died November 3, following a paralytic stroke, aged 59.

Dr. Jones was born in Morgan County, near Barnett, Missouri. While he was yet a young man the family moved to Warrensburg where Dr. Jones attended normal school. Following his graduation in medicine he began his practice in Rolla and later practiced in Ionia and Lincoln. He had been located in Sedalia fourteen years at the time of his death having located there following service in the World War.

Dr. Jones was secretary of the Pettis County Medical Society at the time of his death, was prominent in Masonic circles and in American Legion activities and was always found willing to do his part in each of these bodies. During his years of practice in Sedalia he made many friends.

He was a good Christian man, a kind and ever thoughtful father and a competent and ethical practitioner of medicine. By his untimely death the community has lost an active and loyal citizen and the Pettis County Medical Society has lost a conscientious and valuable member. The following resolution was adopted by the Society:

Resolved, That we deeply regret the loss of Dr. Jones, that we extend to his good wife and the members of his family our deepest and sincerest sympathies, and that a copy of these resolutions be made a part of our records, a copy sent to the press, a copy sent to the Secretary of the Missouri State Medical Association, and that a copy be sent to his family.

C. B. TRADER
A. E. MONROE
J. B. CARLISLE
Committee

MARQUIS DELAFAYETTE ISLEY, M.D.

Dr. M. D. L. Isley, Excelsior Springs, a graduate of the Eclectic Medical University, Kansas City, 1901, died November 19 after a lingering disease of the lungs. He was 68 years of age.

He was born in the neighborhood where his life ended. He had practiced in Excelsior Springs about 35 years. Dr. Isley had a wide acquaintance among the visitors to Excelsior Springs who came from many states. He was always in the front rank as a progressive citizen for his home town, its schools and churches.

He was a member of the Clay County Medical Society for many years and was chief health officer in Excelsior Springs up to the date of his death. It is said of him that he never refused to attend a patient who was not able to pay; he gave of his strength willingly and cheerfully.

His was one of the families that helped found Excelsior Springs; his father, a pioneer of Clay and Ray counties, owned much of the land composing the townsite.

Those who knew him intimately will miss Dr. Isley. He leaves a widow, two daughters, one infant granddaughter and a sister.

The Masonic fraternity conducted a beautiful burial service after a heart-to-heart funeral discourse by the Rev. Jewell Howard of the Christian Church.—J. J. GAINES.

JOHN PAUL NEMOURS, M.D.

Dr. John Paul Nemours, St. Louis, a graduate of the St. Louis College of Physicians and Surgeons, 1889, died at his home from a heart attack November 15, aged 69 years. He was stricken as he alighted from a street car but managed to reach his residence and died almost immediately.

Dr. Nemours was born in St. Louis and began his practice there. After obtaining his medical degree he studied abroad for several years, continuing his medical work and completing violin studies begun in St. Louis. He was for a time first violinist under Waldaur Ernst, the first director of the St. Louis Symphony Orchestra in the late eighties.

While deeply interested in music he was ever active and alert in his practice of medicine. Although in ill health during the last month of his life, Dr. Nemours had continued his practice and treated patients in his office even on the day of his death.

Dr. Nemours is survived by his widow, Mrs. Alanda Nemours, a son who has followed his father's profession, Dr. John R. Nemours, of St. Louis, two sisters and a brother.

NEWMAN R. DONNELL, M.D.

Dr. Newman R. Donnell, St. Louis, a graduate of Beaumont Medical School (now St. Louis University School of Medicine), 1901, died of heart disease at his home September 23, aged 56.

Dr. Donnell was born at Hematite, Missouri, and received his preliminary education at Fayette. He followed his medical studies by an internship at St. Mary's Hospital, St. Louis, and began his practice in Flat River. After two years of general practice he went to Vienna

for postgraduate study where he became actively interested in ophthalmology. He returned and practiced at Herculanum as chief physician for the St. Joseph Lead Company.

His interest in ophthalmology growing ever stronger, he further pursued study in his specialty at the New York Eye and Ear Infirmary in New York City. In 1914 Dr. Donnell moved to St. Louis and became associated with Dr. Emmett P. North in the practice of ophthalmology.

He was a member of the Jefferson County Medical Society until his removal to St. Louis when he became a member of the St. Louis Medical Society. He was also a fellow of the American Medical Association.

He was well loved by his colleagues and his patients always became his friends.

He is survived by his widow, Mrs. Teresa Williams Donnell, and three sons.

SOCIETY PROCEEDINGS

COUNTY SOCIETY HONOR ROLL FOR 1933

(UNDER THIS HEAD WE LIST SOCIETIES WHICH
HAVE PAID DUES FOR ALL THEIR MEMBERS)

HONOR ROLL

Mercer County Medical Society, December 10, 1932.

BUCHANAN COUNTY MEDICAL SOCIETY

The regular meeting of the Buchanan County Medical Society was called to order at the Missouri Methodist Hospital, St. Joseph, at 8 p. m. by the president, Dr. A. E. Burgher.

Drs. George Hopson and C. S. Grant were elected to provisional membership of the Society.

The resignations of Dr. Floyd H. Spencer and Dr. W. H. Minton, of St. Joseph, as members of the board of censors, were accepted.

A letter was read from the advisory public relations committee of the Committee on the Costs of Medical Care. This letter was discussed by Drs. W. T. Elam, C. H. Wallace, Sr., C. A. Good, J. Geiger and F. G. Thompson, of St. Joseph. Dr. F. G. Thompson moved that the president appoint a committee to study the report of the Committee on the Cost of Medical Care and report with recommendations. Seconded and carried. The following were appointed by the president: Drs. W. T. Elam, C. H. Wallace, Sr., and C. A. Good.

The election of officers for 1933 resulted as follows: President, Dr. W. H. Minton; vice president, Dr. G. T. Bloomer; secretary, Dr. Emmett F. Cook; treasurer, Dr. John M. Bell. Three Censors were elected as follows: Drs. Daniel Morton, J. J. Bans-

bach and Willard C. Proud. Delegates for 1933 and 1934, Dr. Floyd H. Spencer; alternate delegate for 1933 and 1934, Dr. S. Earl Senor. Member of the Auxiliary Committee on Public Policy, Dr. Willard C. Proud. Board of Trustees until 1938, Dr. A. E. Burgher.

EMMETT F. COOK, M.D., Secretary.

HENRY COUNTY MEDICAL SOCIETY

The Henry County Medical Society met in the county court room at Clinton, October 27, and was called to order by the vice president, Dr. G. S. Walker, Clinton.

Dr. S. W. Woltzen, Clinton, reported several cases of diphtheria.

Immunization against diphtheria was discussed by Drs. G. S. Walker, E. C. Peelor, and S. B. Hughes, of Clinton.

Dr. G. S. Walker, Clinton, gave his experience in immunizing against scarlet fever and also spoke of intubation and tracheotomy in membranous croup.

Dr. E. C. Peelor, Clinton, told of several cases of severe sore throat which cleared very quickly under treatment.

Dr. S. B. Hughes, Clinton, commented on a case of jaundice apparently of the catarrhal variety with severe nervous symptoms which terminated in death.

Meeting of November 30

The Henry County Medical Society met in the county court room in Clinton, November 30, at 2 p. m. In the absence of the president, Dr. G. S. Walker, Clinton, presided.

The following were present: Drs. J. R. Hampton, S. B. Hughes, E. C. Peelor, G. S. Walker and S. W. Woltzen, of Clinton.

Dr. S. B. Hughes, Clinton, discussed skin grafting and plastic surgery on the male urethra.

Dr. E. C. Peelor, Clinton, brought out several good points on the management of labor.

Dr. J. R. Hampton, Clinton, spoke of the use of pituitrin in labor.

Dr. G. S. Walker, Clinton, reported a case of appendicitis in which the appendix was gangrenous and on the left side of the abdomen. He also reported a case of gangrene of the lung.

S. W. WOLTZEN, M.D., Secretary.

JASPER COUNTY MEDICAL SOCIETY

The meeting of the Jasper County Medical Society was called to order at Joplin, November 22, with fifteen members and five visitors present. In the absence of the president, Dr. J. E. Douglass, Webb City, the vice president, Dr. Ed. D. James, Joplin, presided.

Dr. L. B. Clinton, Carthage, announced the regular staff meeting of the McCune-Brooks Hospital at Carthage with Dr. E. H. Skinner, Kansas City, as guest speaker.

The president appointed committees on resolutions of respect for the mother of Dr. M. O. Coombs and the daughter of Dr. J. W. Barson.

Dr. R. M. James, Joplin, reported a case seen at the City Clinic of a three-year-old child with an irritation of one eye which on closer investigation proved to be pediculosis; none were found in the hair or eye brows.

Dr. O. L. Alberty, Carl Junction, reported a case of tularemia.

Dr. L. B. Clinton, Carthage, called attention to the financial failure of a health and accident insurance company in Texas and warned against further pay-

ment of premiums in case any of the members carried policies with said company.

Through the courtesy of Mr. Howard B. Bardwell, personal director of the Empire District Electric Co., a Davis & Geck film, "Traumatic Surgery of the Extremities," was shown. The discussion was opened by Dr. B. E. DeTar, Joplin, and was freely participated in by those present.

Following this Dr. S. A. Grantham, Joplin, reported a case which was illustrated with moving pictures. It was freely discussed.

Meeting of November 29

The meeting was called to order at Joplin, November 29, with twelve members and five visitors present.

The secretary announced the meeting of the Vernon-Cedar and Bates County Medical Societies on December 1.

A communication from the advisory public relations committee of the Committee on the Costs of Medical Care was read by the secretary. After some discussion the secretary was instructed to get the report and such other information as may be available.

Dr. S. H. Miller, Joplin, reported a case of a nine-year-old boy who had carried a piece of glass under the skin in the instep of his foot for four and a half years. This report led to a "hoss race" to see who could tell the best story about a foreign body. The decision was withheld.

Dr. Herbert L. Mantz, Kansas City, Missouri, gave a talk on "Tuberculosis, an Infectious Disease" reviewing first some of the early medical descriptions of tuberculosis. He illustrated his talk with lantern slides showing particularly the positive identification of the disease in several members of the same family from a common focus in parent or grandparent.

After a liberal discussion Dr. Mantz closed the discussion and the meeting was adjourned.

Meeting of December 6

The December 6 meeting of the Jasper County Medical Society was called to order by Dr. J. E. Douglass, Webb City, president. There were twenty-eight members and twenty-five visitors present.

Dr. R. M. James, Joplin, discussed several cases of diphtheria in children who had been immunized; also a case of diabetes insipidus.

Dr. J. A. Chenoweth, Joplin, and Dr. W. S. Loveland, Joplin, each reported cases of tularemia.

The annual election of officers was held with the following results: President, Dr. M. O. Coombs, Joplin; vice president, Dr. Ed. D. James, Joplin; secretary, Dr. Paul W. Walker, Joplin; treasurer, Dr. H. D. McGaughey, Joplin; censors, Dr. J. L. Sims, Joplin, succeeding himself; Dr. Roy E. Myers, Joplin, to finish two years of Dr. Coombs' term; delegates, Dr. L. C. Chenoweth, Joplin, and Dr. L. B. Clinton, Carthage; alternates, Dr. A. Benson Clark, Joplin, and Dr. J. E. Douglass, Webb City. Dr. L. B. Clinton, Carthage, will continue as censor, his term not having expired.

Dr. W. W. Duke, Kansas City, presented the scientific program for the evening. He discussed "Allergy With Special Reference to the Sensitiveness to Physical Agents." The subject was illustrated with lantern slides and moving pictures of cases demonstrating their susceptibility to heat and cold.

The discussion of Dr. Duke's paper was opened by Dr. R. C. Lowdermilk, Galena, Kansas, who was followed by several others.

Dr. Duke closed the discussion and the meeting adjourned.

O. T. BLANKE, M.D., Secretary.

NODAWAY COUNTY MEDICAL SOCIETY

The Nodaway County Medical Society met in regular monthly session at the St. Francis Hospital, Maryville, November 11. This meeting was held as a memorial and celebration of the sixtieth anniversary of the Society's foundation on November 23, 1872.

The vice president, Dr. R. C. Person, Maryville, called the meeting to order. Members present were Drs. Chas. T. Bell, L. E. Dean, C. V. Martin, R. C. Person, Hugh S. Rowlett, of Maryville; Hiram Day, Parnell; Charles D. Humberd, Barnard; Eugene L. Crowson, Pickering, and R. B. Bridgeman, Jr., Hopkins. Guests present were Dr. J. M. Boyles, Conception Junction; Dr. B. F. Byland, Burlington Junction; Dr. Loren Egle, Maryville; Dr. F. R. Anthony, Springdale, Arkansas; Drs. Earl Braniger, E. L. Enis, Jesse Miller and H. L. Stinson, dentists of Maryville, and several sisters from the hospital staff. One of the Society's founders and charter members, Dr. Wm. Miles Wallis, of Maryville, is still alive, but last-minute circumstances prevented his attendance.

The secretary read the applications of Drs. B. F. Byland, Burlington Junction, and J. M. Boyles, Conception Junction, for membership in the Nodaway County Medical Society and the Missouri State Medical Association. The following committee of censors was appointed: Drs. C. T. Bell, L. E. Dean, and C. V. Martin, of Maryville, and these applications were referred to them to be returned at the next meeting.

Dr. C. V. Martin, Maryville, assumed charge of the memorial services at the request of the vice president, Dr. R. C. Person. Dr. Martin spoke briefly of his early recollections of the Society, and called Dr. Eugene L. Crowson, Pickering, to the floor. Dr. Crowson told of "Early Days of the Nodaway County Medical Society." The doctor's acquaintance with his subject dates back more than forty years. He mentioned the pioneer hardships of his beginning practice and the difficulties of the long horse-back trips over the country lanes to attend medical meetings. He spoke most highly of his departed comrades of the early years, and recalled many personal touches from his associations with them. He believes that the organization of medical practice is now on a firmer foundation than ever before in its history.

Dr. Jesse Miller, Maryville, D.D.S., made a short talk on the layman's ideas of and attitude toward the County Medical Society, and of the praiseworthy current trends in both medical and dental practice. He also recalled some personal impressions of the local physicians of thirty-five years ago.

Dr. H. L. Stinson, Maryville, D.D.S., told of some humorous incidents concerning his physician friends of a still earlier day, and Dr. L. E. Dean likewise contributed some remarks on laughable incidents of medical matters in bygone years.

Dr. R. B. Bridgeman, Jr., Hopkins, by request gave the younger physicians' ideas of what a county medical society should be and what it should offer to its members.

Dr. Charles D. Humberd, Barnard, presented "High Spots from the Old Minute-Books." After reading the minutes of the first meeting he traced the history of the Society and of local medical work from its beginnings through the vicissitudes of sixty years. The old records of the Society hold numerous pictures that present all phases of pathos and comedy and tragedy, with the one idea of more efficient alleviation of human suffering as a goal

toward which every effort of the Society has been directed. Time has wrought many changes and it is to be hoped that when a secretary reviews our present minutes sixty years from now he can find and feel in our efforts the same sincerity that dominated the actions of those whom we have succeeded.

Dr. F. R. Anthony, now of Springdale, Arkansas, was introduced by Dr. Martin. Dr. Anthony left Nodaway County and retired from practice about ten years ago after having served as secretary of the Nodaway County Medical Society for many years. He had made a special trip back to Maryville to be present at this anniversary meeting. Dr. Anthony spoke of his pride and tender affection for the Society and complimented the Society very highly on its ideals and its work.

Dr. Hugh S. Rowlett, Maryville, contrasted the present with the past in our field, with especial emphasis on the valuable works which the laboratory aids to diagnosis and treatment have contributed in recent years.

Dr. Eugene L. Crowson, Pickering, moved that the Society adjourn. The motion was seconded by Dr. L. E. Dean, Maryville, and carried at 9:25 p. m., but the actual adjournment was postponed for another hour by the much appreciated efforts of the Sisters in preparing a surprise "feed" for all the members present.

CHARLES D. HUMBERD, M.D., Secretary.

ST. FRANCOIS-IRON-MADISON COUNTY MEDICAL SOCIETY

The St. Francois-Iron-Madison County Medical Society held its regular meeting in the county court house at Farmington, November 30.

The following resolutions were read and accepted by the society:

WHEREAS, Our fellow member and beloved co-worker in the field of medical science, Dr. N. M. Fuller, Desloge, Missouri, has been removed from our midst by death and

WHEREAS, We realize that we have lost a personal friend, that the community has lost an earnest disciple of the science of medicine and that humanity has lost a man who devoted his life to the alleviation of suffering, therefore be it

Resolved, That we extend our heartfelt sympathy to his bereaved family. And be it further

Resolved, That a copy of these resolutions be spread upon the minutes of this society and that a copy be sent to the family of the deceased member.

A very interesting program through the courtesy of the Postgraduate Committee was presented.

Dr. J. W. Larimore, St. Louis, presented a paper on "Diseases of the Right Colon and Their Differential Diagnosis," which was illustrated by a series of excellent lantern slides.

Dr. A. O. Fisher, St. Louis, gave us an equally good talk on "Surgery of the Gallbladder and Related Conditions."

It was decided that the next regular meeting will be held in December at Ironton.

C. H. APPLEBERRY, M.D., Secretary.

FUNDAMENTALS OF ELECTROCARDIO- GRAPHIC INTERPRETATION

In this continuation of his discussion of the fundamentals of electrocardiographic interpretations, J. Bailey Carter, Chicago (*Journal A. M. A.*, Oct. 15, 1932), considers auricular extrasystoles, A-V nodal extrasystoles, auricular flutter, auricular fibrillation, ventricular fibrillation, heart block, and partial heart block.

WOMAN'S AUXILIARY

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

11th Annual Meeting, Milwaukee, 1933

President, Mrs. James F. Percy, Los Angeles, Calif.

President-Elect, Mrs. James Blake, Hopkins, Minnesota.

WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION

9th Annual Meeting, Kansas City, 1933

President, Mrs. David S. Long, Harrisonville.

President-Elect, Mrs. Hudson Talbott, St. Louis.

ORGANIZED COUNTIES AND PRESIDENTS

COUNTY	PRESIDENT AND ADDRESS
Boone.....	Mrs. C. M. Sneed, Columbia
Buchanan.....	Mrs. C. H. Werner, St. Joseph
Cass.....	Mrs. H. A. Brierly, Peculiar
Cape Girardeau.....	Mrs. W. W. Ford, Gordonville
Clay.....	Mrs. H. J. Clark, Excelsior Springs
Cole.....	Mrs. James T. Leslie, Jefferson City
Gentry.....	Mrs. W. S. Campbell, Albany
Greene.....	Mrs. W. C. Cheek, Springfield
Jackson.....	Mrs. Wilbur A. Baker, Kansas City
Jasper.....	Mrs. Ulysses G. Hoshaw, Joplin
Johnson.....	Mrs. William R. Patterson, Warrensburg
Lafayette.....	Mrs. Odus Liston, Oak Grove
Linn.....	Mrs. Ola Putman, Marceline
Livingston.....	Mrs. Reuben Barney, Chillicothe
Miller.....	Mrs. G. D. Walker, Eldon
Randolph-Macon.....	Mrs. P. C. Davis, Moberly
St. Louis City.....	Mrs. A. G. Wichman, St. Louis
Saline.....	Mrs. L. S. James, Blackburn
Vernon-Cedar.....	Mrs. T. B. Todd, Nevada
26th District.....	Mrs. W. H. Breuer, St. James

MESSAGE FROM PRESIDENT LONG

On the death of our president, Mrs. Walter Jackson Freeman, Philadelphia, the office of president was automatically filled by the first vice president, Mrs. James F. Percy, Los Angeles.

In a brief message Mrs. Percy is calling upon all of us to help her carry out the program planned by Mrs. Freeman. It gives me happiness to know that Missouri auxiliaries are doing this. Practically every county auxiliary is maintaining its *Hygeia* standard some having surpassed their last year's goal. Several auxiliaries have had public relations meetings, others are planning to have one this month. Several counties report that the essay contest has started, notably the one being sponsored by Buchanan County Auxiliary under the direction of Mrs. McGlothlan. Excellent programs have been planned by Mrs. U. J. Busiek, Springfield. By the close of this administration we shall have the accurate archives which Mrs. Freeman so eagerly hoped for.

MRS. PERCY'S MESSAGE

In the great round of life with its swift changes it is for us to muster courage, wisdom and a timely going forward that the momentum of our splendid organization may not stop. With a heroic array of constructive plans to have been presented by our late beloved president to the national board members on November 19, we are now at the place where we must mark time for a few weeks until the activities of the last few months shall have been arranged in their proper places and your officers have a clear picture of our proper status.

We feel that a special responsibility may be asked of the state presidents and their state and county officers in order to integrate the work of the old and the beginning of the

new. We are asking and hoping that the state presidents with their officers will assist in this in order that the work may be helpfully done all over the country. May the hearty cooperation of every member be given this fine work.

If you do not hear from the standing committees during the interim of a few weeks you will know that something beneficial to our future stability and usefulness is being worked out. Auxiliaries who succeed in speeding up, adding to or stimulating their activities, both actual and possible, will be considered by the national officers as inhabitants of the "Isle of the Blest."

It has been my pleasure to visit nine county auxiliaries during October and November. It has been a real privilege to meet the members in a social way and to share in the fine loyal spirit that abounds. Cole County Auxiliary had an interesting conference in Jefferson City. Boone County Auxiliary had a luncheon at the Country Club in Columbia. A luncheon in Moberly with the Randolph-Monroe County Auxiliary was followed by a meeting at the home of Mrs. Paul C. Davis. Jasper County Auxiliary gave a luncheon at the Woman's Club. Cape Girardeau County had a dinner at the home of Dr. and Mrs. Paul Williams. Another dinner party was held in Springfield with the enthusiastic Greene County Auxiliary. Johnson County Auxiliary invited the Lafayette County Auxiliary, and their husbands, and entertained by a social evening at the home of Dr. and Mrs. Johnson. Saline County Auxiliary also invited the medical society to a turkey dinner in Marshall. I attended a luncheon and book review given by the Jackson County Auxiliary.

These personal contacts have been very stimulating to your president and it is her great desire that she may have been able to leave behind her some bit of inspiration or help.

MRS. DAVID S. LONG, President.

The Clay County Auxiliary meets bimonthly, alternately at Excelsior Springs and Liberty, as does the medical society of that county. The doctors and their wives have dinner together followed by the business meeting of each. Sometimes, as in the October 27 meeting, the Auxiliary meeting adjourns to enjoy the scientific program of the medical society. Mrs. J. J. Gaines, Excelsior Springs, is the newly appointed publicity chairman for this auxiliary.

The procedure of the St. Louis Medical Society Auxiliary is unique. Each monthly meeting will include the following routine: 10:30 to 12 o'clock, bridge lesson; 12 to 12:45 p. m., parliamentary law; 12:45 p. m., luncheon; 1:30 p. m., program. The special programs for the year promise to be varied, valuable and full of interest.

The week of October 17 this auxiliary entertained the wives of the physicians attending the Convention of the American College of Surgeons. The social calendar included a drive through the city and a tea to 200 guests at the St. Louis Medical Society Building.

At the October meeting of the Johnson County Auxiliary at the home of Dr. and Mrs. J. A. Powers, Warrensburg, a good attendance from Lafayette County was reported in addition to a full local attendance.

On November 8 the medical societies and auxiliaries of both counties met for dinner at the Devault Hotel, Warrensburg, to honor the state president, Mrs. David S. Long, Harrisonville. Dr. Long was also a guest at this meeting. Physicians and

their wives from each county were on the introductory program preceding the address by Mrs. Long who spoke on "Aims and Purposes of an Auxiliary."

As previous records have shown, Lafayette County Auxiliary is equally hospitable in sharing its good programs and good times with Johnson County Auxiliary.

An item on the Lafayette County Auxiliary October report is noted here in the hope that other auxiliaries will follow suit. "Mrs. Johnson was appointed to make a file of the American Medical Association *Bulletin* containing Mrs. Freeman's letters."

Buchanan County Auxiliary reports the essay contest in healthy activity, a membership tea in October and a luncheon in November with Dr. Sam H. Snider, Kansas City, speaking on "Modern Methods in the Control of Tuberculosis." The December meeting provides for a silver offering or a contribution of jellies for the Sheltering Arms for homeless little children.

The Cass County Auxiliary held its public relations meeting December 8 at the home of Dr. and Mrs. M. P. Overholser in Harrisonville. A large number of interested persons from many organizations were present to hear Dr. Sam H. Snider, Kansas City, present the facts and problems relating to tuberculosis.

This year the Cass County Tuberculosis Association is aiding the auxiliary in placing *Hygeia* in all the schools of the county.

TRUTH ABOUT MEDICINES

NEW AND NONOFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Non-official Remedies:

PENTNUCLEOTIDE.—The sodium salts of the pentose nucleotides from the ribonucleic acid of yeast. Pentnucleotide is proposed for use in infectious conditions accompanied by a leukopenia or neutropenia, such as agranulocytic angina. It is marketed in the form of Vials Pentnucleotide, 10 c.c. Smith, Kline & French Laboratories, Philadelphia, Pa. (Jour. A. M. A., October 1, 1932, p. 1175.)

LIVER EXTRACT.—Parke, Davis & Co.—A light brown granular powder representing a water-soluble fraction of mammalian liver, which contains the substance effective in the treatment of pernicious anemia. It is supplied in vials containing an amount of powdered extract (3 to 3.5 Gm.) obtained from 100 Gm. of fresh liver. Parke, Davis & Co., Detroit.

LIVER EXTRACT (Intramuscular).—Parke, Davis & Co.—A sterile aqueous solution, containing the nitrogenous nonprotein fraction G of Cohn et al. obtained from fresh mammalian liver. **LIVER EXTRACT (Intramuscular).**—Parke, Davis & Co. is used in the treatment of pernicious anemia. It is supplied in the form of 2 c.c. glaseptic ampoules, each c.c. containing the active material obtained from 5 Gm. of liver. Parke, Davis & Co., Detroit.

UNDULANT FEVER BACTERIAL VACCINE.—A heat killed suspension in physiologic solution of sodium chloride of *Brucella melitensis* (The Journal, February 6, 1932, p. 480), var. abortus (bovine type, 50 per cent; porcine type, 50 per cent), preserved with 0.5

per cent of phenol. Each cubic centimeter contains six billion killed organisms. The product is marketed in packages of six 2 c.c. vials. Jensen-Salsbery Laboratories, Inc., Kansas City, Mo. (Jour. A. M. A., October 8, 1932, p. 1262.)

BILIPOSOL.—A complex compound of high molecular weight, the chemical structure of which has not been established, combining bismuth and *a*-carboxethyl— β -methyl nonoic acid. It contains about 45 per cent of bismuth. Biliposol is proposed as a means of obtaining the systemic effects of bismuth in the treatment of syphilis (see Bismuth Compounds, New and Nonofficial Remedies, 1932, p. 100). It is marketed in 2 c.c. ampoules. Ulmer Laboratories, Minneapolis. (Jour. A. M. A., October 22, 1932, p. 1424.)

GAS GANGRENE ANTITOXINE (Combined).—An anaerobic antitoxin (New and Nonofficial Remedies, 1932, p. 359) prepared by immunizing horses against the toxins of *B. perfringens* (*B. welchii*) and vibriion septique. The product is marketed in packages of one syringe containing 10,000 units of perfringens antitoxin and 10,000 units of vibriion septique antitoxin. Eli Lilly & Co., Indianapolis, Ind.

TETANUS-GAS-GANGRENE ANTITOXIN (Combined).—An anaerobic antitoxin (New and Nonofficial Remedies, 1932, p. 359) prepared by immunizing horses against the toxins of *B. tetani*, *B. perfringens* (*B. welchii*), and vibriion septique. The product is marketed in packages of one syringe containing 1,500 units of tetanus antitoxin, 1,000 units of perfringens antitoxin and 1,000 units of vibriion septique antitoxin. Eli Lilly & Co., Indianapolis, Ind.

TUBERCULIN INTRACUTANEOUS FOR MANTOUX TEST.—This tuberculin-Koch preparation (New and Nonofficial Remedies, 1932, p. 376) is marketed in packages of one intradermal syringe (single test); in packages of two intradermal syringes (double test); in packages of one 1 c.c. ampule; in packages of two 1 c.c. ampoules, in packages of one 5 c.c. ampule; and in packages of two 5 c.c. ampoules. The National Drug Co., Philadelphia. (Jour. A. M. A., October 29, 1932, p. 1511.)

FOODS

The following products have been accepted by the Committee on Foods of the American Medical Association for inclusion in Accepted Foods:

LIGHTNING FLOUR (Bleached) (Bob White Flour Mills, Kingfisher, Okla.).—A "standard patent" "all purpose" hard wheat flour; bleached.

ROYAL TABLE QUEEN BREAD (Sliced) (Royal Baking Company, Ogden and Salt Lake City, Utah).—A white bread made by the sponge dough method.

MELLO-WHEAT BREAKFAST FOOD (The Quaker Maid Company, Inc., New York, packer; The Great Atlantic & Pacific Tea Company, distributor).—Hard wheat "flour middlings" or farina. It is claimed to be for use as a breakfast cereal or other table dishes; also for infant feeding under the direction of a physician. (Jour. A. M. A., October 1, 1932, p. 1175.)

LA FRANCE FLOUR (Bleached) (Morten Milling Company, Dallas, Texas).—An "all purpose" hard and red winter wheat short patent flour; bleached.

GORMAN'S RAISIN BREAD (Gorman's Bakery, Central Falls, R. I.).—A raisin bread made by the straight dough method.

FORT HAMILTON BRAND GOLDEN TABLE SYRUP (Union Starch and Refining Company, Columbus, Ind., distributor; E. H. Frechtling Company, Hamilton, Ohio, distributor).—A corn syrup flavored with refiner's syrup.

MCCORMICK'S RELISH SPREAD (McCormick and

Company, Baltimore, Md.).—A mix of McCormick's mayonnaise (refined corn oil, egg yolk, distilled vinegar, salt, sucrose, mustard and paprika) and McCormick's sweet chopped pickle relish (lactic acid fermented cucumbers, cauliflower and onions, mixed with sucrose, distilled vinegar and peppers). It is used as a relish.

BLUE RIBBON BRAND UNSWEETENED EVAPORATED MILK (Amboy Milk Products Company, Amboy, Ill., manufacturer; Oakford & Fahnestock, Peoria, Ill., distributor).—Canned unsweetened evaporated milk. The vitamins A, B, C and G of the fresh milk are claimed to be only slightly impaired. The mixture of equal parts of the evaporated milk and water is claimed to be not below the legal standard for whole milk. (Jour. A. M. A., October 8, 1932, p. 1263.)

WHITE OAK BRAND CRYSTAL WHITE SYRUP (Wheeler-Barnes Company, Minneapolis).—A corn syrup base (85 per cent) with rock candy syrup (15 per cent).

MALT-O-MEAL (Campbell Cereal Company, Northfield, Minn.).—A mixture of farina (purified wheat middlings) with sufficient toasted malted barley to give the product a malt flavor. It is claimed to be a malt flavored farina breakfast cereal.

(a) **KING OF KANSAS FLOUR (Bleached)**; (b) **LARABEE'S CREAM LOAF FLOUR (Bleached)**; (c) **OLD DOMINION FLOUR (Bleached)**; (a) **Monarch Milling Company**, (b) **Larabee Flour Mills Company**, (c) **Larabee Corporation**; subsidiaries of the Commander-Larabee Corporation, Minneapolis).— "Standard patent" or "long patent" hard wheat flours; bleached. (Jour. A. M. A., October 15, 1932, p. 1353.)

DAVIS OK BAKING POWDER (R. B. Davis Company, Hoboken, N. J.).—A baking powder containing sodium bicarbonate, monocalcium acid phosphate, sodium aluminum sulphate, corn starch, and a small quantity of dried white of egg.

MOTHER'S BREAD (Roanoke Sunlight Bakery, Inc., Roanoke, Va.).—A white bread made by the sponge dough method.

CEDAR HILL BRAND TOMATO JUICE (American Packing Corporation, Evansville, Ind., manufacturer; Hassendeubel Grocery Company, St. Louis, distributor).—Canned tomato juice which retains in large measure the vitamin content of the raw juice used. It contains a small amount of added salt. It is claimed to be a good source of vitamins A and B and an excellent source of vitamin C. (Jour. A. M. A., October 22, 1932, p. 1424.)

ACCEPTED DEVICES FOR PHYSICAL THERAPY

The following has been accepted by the Council on Physical Therapy of the American Medical Association for inclusion in its list of accepted devices for physical therapy:

BARACH-THURSTON SOLARIUM OXYGEN TENT.—This unit is claimed to be an adjunct in the treatment of anoxemia resulting from acute pulmonary edema, coronary thrombosis, cardiac decompensation, pneumonia and carbon monoxide poisoning. The oxygen tent consists of an air-conditioning and oxygen enriching unit, connected to a rubberized tent canopy supported above the bed, for the purpose of administering to a patient oxygen or a combination of oxygen and carbon dioxide. It is capable of maintaining therapeutic air environment at or below room temperature. Fan speed and volume of circulation are controlled by an electric motor-blower with multistep rheostat. Oxygen Therapy Service, Inc., New York. (Jour. A. M. A., October 15, 1932, p. 1352.)

BOOK REVIEWS

DIAGNOSIS AND TREATMENT OF DISEASES OF THE THYROID GLAND. By George Crile and Associates. Edited by Amy F. Rowland. Illustrated. Philadelphia and London: W. B. Saunders Company. 1932. Price \$6.50.

Probably no living man has a more profound knowledge of the anatomy, histology, biochemistry and pathology of the thyroid gland than Dr. George Crile possesses. Associated with this knowledge of the thyroid is a skillful surgical technic which establishes him as one of the world's authorities on this subject.

The book contains such chapters as "Iodine and the Thyroid Gland"; "Biochemistry of Iodine"; "The Role of the Thyroid Gland in the Energy System," followed by a description and discussion of all phases of thyroid abnormality. Nonoperative and surgical treatment, and the preoperative and postoperative care of the patient are discussed in a manner that could be done only by one having had the experience of the author. This volume is the latest word on the thyroid gland. A. A. W.

ORTHOPEDICS IN CHILDHOOD. By William L. Sneed, M.D., Attending Surgeon, Hospital for the Relief of the Ruptured and Crippled, etc. (One of the Everyday Practice Series—Edited by Harlow Brooks, M.D.) 145 illustrations. Philadelphia and London: J. B. Lippincott Company. Price \$5.00.

The purpose of this book is "to stimulate interest in accuracy of diagnosis in both infancy and childhood in order that all deformities and deviations from the normal may be recognized as early as possible." It is written primarily for the pediatrician and general practitioner but if the latter would turn to the discussions of bone syphilis he will find a chapter that could be written in thirty minutes and gives practically nothing on the symptomatology of bone syphilis. "Where bowlegs is due to a generalized softening of bone it is probably a glandular disturbance," and a case history is cited in which there was "a persistent thymus with involvement of other glands." So much for the relation of the endocrines to bone pathology. In another book of this series, "Posture," by Frank D. Dickson, the subjects of flatfeet, bowlegs and knockknee are treated much more fully.

The book is not carefully written. The word "tubercular" is used frequently instead of "tuberculous."

The treatment of fractures and dislocations may be sufficiently interesting to the orthopedist but there is little to commend it to the pediatrician or general practitioner. H. L. D.

ANATOMY OF THE BRAIN AND SPINAL CORD. By William W. Looney, A.B., M.D., Professor of Anatomy, Baylor University College of Medicine, Dallas, Texas. With 153 illustrations. Second edition, revised. Philadelphia: F. A. Davis Company. 1932. Price \$4.50.

In the preface the author states, "An effort has been made to state simply and concisely the anatomical and physiological facts concerning the central nervous system which every medical student, or others who may have to deal with neurological conditions, should know." He has accomplished his purpose without sacrificing important details by the

use of well written descriptions and of splendid original diagrams. However, the purpose of the book has eliminated discussions on controversial questions.—E. A.

THE PRACTICAL MEDICINE SERIES. Comprising Eight Volumes on the Year's Progress in Medicine and Surgery. Dermatology and Syphilis. Edited by Fred Wise, M.D., Professor of Dermatology and Syphilology, New York Post-Graduate Medical School and Hospital of Columbia University, and Marion B. Sulzberger, M.D., Associate in Dermatology and Syphilology, New York Post-Graduate Medical School and Hospital of Columbia University. Urology. Edited by John H. Cunningham, M.D., Associate in Genito-Urinary Surgery, Harvard University Post-Graduate School of Medicine. Series 1931. Chicago: The Year Book Publishers.

This little volume consists of a resumé of the important dermatological literature of 1931. In the preface the statement is made that the general practitioner was kept in mind when the selection of articles to be abstracted was made but such is not always the case. There is too much of the experimental and not enough of the practical. More articles on treatment would materially add to the value of the book. Otherwise there is no adverse criticism to be made and the editors' parenthetical remarks on many of the abstracts are to the point. N. T.

CLINICAL ENDOCRINOLOGY OF THE FEMALE. By Charles Mazer, M.D., F.A.C.S., Assistant Professor of Gynecology and Obstetrics, Graduate School of Medicine, etc., and Leopold Goldstein, M.D., Demonstrator of Obstetrics, Jefferson Medical College; Assistant Gynecologist to Mt. Sinai Hospital, etc. Illustrated. Philadelphia and London: W. B. Saunders Company. 1932. Price \$6.00.

Until recent years the underlying biochemical phenomena of sexual development and function have been little understood. Much of the mystery still remains to be revealed. Intense interest has been manifested in the solution of such problems as the determination of the presence of hormones of the ovaries, the number of these hormones and their function.

The proof that the anterior lobe of the pituitary secretes substances, chemical in nature, which activate the ovaries, seemed at first to complicate our ideas of the menstrual cycle. There still remains the question whether there are two sex stimulating hormones of the anterior lobe, or whether the dual function of follicle formation and luteinization result from activation by a single substance.

The discovery that the placenta is an organ of internal secretion was rather startling. Lately a lactating hormone of the anterior lobe pituitary has been found. Hisaw discovered a relaxing hormone of the corpus luteum which causes softening and relaxation of the pelvic ligaments and symphysis at the end of gestation.

In this volume Mazer and Goldstein discuss interestingly and learnedly the endocrinology of the female with special emphasis upon those functional phases to which woman is heir, viz., puberty, menstruation, pregnancy, lactation and menopause.

The subject matter is well written and a perusal of this book should give one an understanding of sex hormonology as it is known today. A. A. W.

TREATMENT OF SYPHILIS. By Jay F. Schamberg, A.B., M.D., Professor of Dermatology and Syphilology in the Graduate School of Medicine of the University of Pennsylvania, etc., and Carroll S. Wright, B.Sc., M.D., Professor of Dermatology and Syphilology in the Temple University School of Medicine, etc. Illustrated. New York and London. D. Appleton and Company. Price \$8.00.

Schamberg and Wright have written the first American treatise in several years dealing exclusively with syphilis therapy. The book is modern in every respect, the literature complete and thoroughly evaluated. The authors have had a large clinical experience with syphilis and their opinions on this subject are held in high regard.

Schamberg has preached the importance of conservative dosage of the arsenicals for years and as a result has not had a single fatality nor a serious complication in 30,000 neosarsphenamine injections. The authors consider sulpharsphenamine to have its greatest field of usefulness in congenital syphilis, an opinion held by most American syphilologists.

Pyretotherapy or fever therapy is thoroughly discussed and it promises to be more widely used by clinicians than at present. As a preventive of neurological and mental complications it occupies an important place in the treatment of the disease. In paresis, malarial therapy has already proved its value in at least one third of all unselected cases. Diathermy is much safer and attended by less risk to the patient and in the authors' opinions may some day supersede malaria inoculation.

Intraspinal therapy has fallen into disuse since the advent of other methods of treatment. Schamberg considers this heroic measure unnecessary except possibly in certain cases of optic neuritis.

Bismarsen has been a valuable drug in their hands and promises to be more widely used in visceral forms of the disease. The reviewer has employed it in cardiovascular lues with satisfactory results.

The pharmacology, mode of administration, technique and drug reactions of the various heavy metals and arsenicals are ably presented and the modern literature reviewed.

Altogether the book can be highly recommended as a modern treatise dealing with a disease often mis-treated and misunderstood.

N. T.

THE PRACTICAL MEDICINE SERIES. Comprising Eight Volumes of the Year's Progress in Medicine and Surgery. General Therapeutics. By Bernard Fantus, M.S., M.D., Professor of Therapeutics, University of Illinois College of Medicine; Member, Revision Committee United States Pharmacopeia and of National Formulary Revision Committee, and Louis B. Kartoon, B.S., M.D., Instructor of Medicine, University of Illinois College of Medicine. Series 1931. Chicago: The Year Book Publishers.

Year books have gotten to be almost a necessity to the busy practitioner who does not find time to read the many articles which appear each year in every branch of medicine. The present volume on the year's progress in therapeutics is edited by Bernard Fantus of Chicago, who has long been identified with the teaching of therapeutics. This is, in itself, a guarantee that the review of the year's work is thorough and that no noteworthy contribution has been overlooked. One of the most important advances of the year has perhaps been the use of the cortical adrenal hormone for Addison's disease

which produces results in most cases comparable to those of insulin in diabetes. In passing, it may be remarked that the high price of the hormone (\$6 for 10 c.c.) makes its use prohibitive in all but well-to-do patients. A rather complete discussion of pyretotherapy (fever therapy) as induced by the injection of foreign proteids, malaria, diathermy, etc., is given in this volume and its effects on thrombo-angiitis obliterans, psychoses, chorea and various infections discussed. There is also a sensible review of the result of and indications for a rest cure as advocated by S. Weir Mitchell and last, but not least, a resumé of American and European "spas" as therapeutic agents which, in view of the present period of depression, is both timely and interesting. In general, it may be said that this volume is one of the best reviews on the subject of therapeutics that has come to the reviewer's notice.

L. H. H.

THE PRACTICAL MEDICINE SERIES. Comprising Eight Volumes of the Year's Progress in Medicine and Surgery. Obstetrics. Edited by Joseph B. DeLee, A.M., M.D., Professor of Obstetrics, University of Chicago Medical School; Attending Obstetrician and Medical Director, Chicago Lying-in Hospital and Dispensary. Gynecology. Edited by J. P. Greenhill, B.S., M.D., F.A.C.S., Attending Gynecologist, Cook County Hospital, etc. Series 1931. Chicago: The Year Book Publishers.

This annual overhauling and critical study of the year's work in obstetrics and gynecology has become indispensable to the student, be he undergraduate, general practitioner or specialist.

The trend of thought, as it applies to the diagnosis of pregnancy, anesthesia in obstetrics, endocrinology of menstruation and many other questions, is beautifully outlined in this work.

W. C. G.

THE INTERNATIONAL MEDICAL ANNUAL. A Year Book of Treatment and Practitioner's Index. By Various Contributors. Fiftieth Year, 1932. New York: William Wood and Company.

This volume must be a god-send to the practitioner of medicine isolated in the wilderness, or where he cannot have frequent access to the recent medical literature.

It contains in alphabetical order references to the recent literature (i. e., including 1930, with a little of 1931) on practically all the major subjects coming to the attention of the general practitioner.

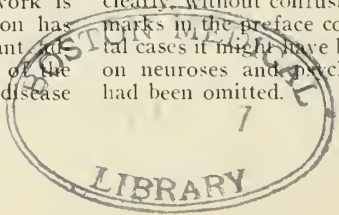
Inasmuch as it is the jubilee edition, some of the authors have contributed surveys of the results in their departments in the last 10 years, notably so in endocrinology. These analyses of the trend of events should be particularly useful. The illustrations are excellent.

G. H. H.

NURSING IN NERVOUS DISEASES. By James W. McConnell, M.D., Neurologist to the Philadelphia General Hospital, etc. Illustrated with 24 engravings. Philadelphia: F. A. Davis Company. 1932. Price \$1.50.

This small book should be very useful in providing for the nurse the fundamental necessities of care of neurologic patients. The matter is presented clearly without confusing details. From the few remarks in the preface concerning the nursing of mental cases it might have been as well if the last chapter on neuroses and psychoses, necessarily very brief, had been omitted.

F. M. B.



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E. J. GOODWIN, M.D., Editor
1023 Missouri Building, St. Louis, Mo.
Telephone, Jefferson 5261.

PUBLICATION } J. C. B. DAVIS, M.D., Chairman
COMMITTEE } G. WILSE ROBINSON, M.D.
M. A. BLISS, M.D.

FOREIGN BODIES IN THE BLADDER*

MAX GOLDMAN, M.D.

KANSAS CITY, MO.

The problem of the removal of an object which has found its way into a portion of the urinary or genital tract frequently confronts the general practitioner as it often does the specialist in urology. Many times the diagnosis of a foreign body in the bladder is not made until long after the object has found lodgement in the viscus and after considerable damage has been done to the organ by infection, inflammation, or ulceration. Hence, not only is an early correct diagnosis necessary as a safeguard to the patient's welfare, but by securing a fair knowledge of the shape, size and time of lodgement of the object, the surgeon will oftentimes materially lessen the difficulties attending its successful extraction.

It must be apparent that the diagnosis is not always easy; particularly when nothing in the history of the case suggests a search for a foreign object. In the great majority of the cases we meet with emphatic and persistent denial when we question the patient as to the actual cause that is exciting the symptoms complained of; hence, unless the investigation is very carefully conducted the history may be most misleading. Clarence G. Bandler¹ reports a case of hairpin and calculus in the bladder of a girl 17 years of age in whom persistent questioning failed altogether to secure from her a history of the method of entrance. The consequence is that the early application of therapeutic measures intended to relieve the classical symptoms of a hastily diagnosed cystitis may lead to many regrettable mistakes unless treatment is preceded by a complete and painstaking urological examination in every case. It follows, therefore, that the history should be obtained and the physical examination conducted in a most thorough manner with

attention to the minutest details whenever a case of suspected cystitis presents itself. Alertness is very essential; and if the physician will bear in mind always that a foreign body in the bladder is very often responsible for all the symptoms of a troublesome cystitis, he will by his vigilance many times escape the embarrassment of a gross error in diagnosis.

Many patients become the subjects of misdirected operative interferences before the correct diagnosis of a foreign body is made; some interesting case reports bearing on this particular phase of the subject were published by W. T. Briggs.² Fortunately, the technic of such an examination is not entirely beyond the reach of every general medical man.

In this connection, however, it must be borne in mind that there are many cases of foreign bodies in which no definite symptoms are present. M. L. Levy¹⁰ quotes the case of a woman who had had an operation for appendicitis, and later was treated for some time by her physician for "cystitis"; subsequently it was found that she had a clinical thermometer in her bladder. At the time of the removal an encrusted calculus of large size had formed around the thermometer. Is it not strange that her symptoms—dysuria, frequency and even incontinence—pointed to cystitis but failed to suggest foreign body at the outset?

The diagnosis of foreign body in much the same way as the diagnosis of every urological problem can be made through the agency of a careful, complete and well directed physical examination; and this is certainly called for when the three cardinal symptoms, dysuria, frequency and urgency, with or without pyuria or hematuria, present themselves. Such a physical examination, in addition to a careful history, should consist of (1) a complete roentgenological investigation of the upper and lower urinary tracts; (2) the chemical and microscopical analysis of the catheterized urine; (3) cystoscopy; (4) a rectal, pelvic or vaginal examination, as the case may be.

* Read at a meeting of the Staff of the Alfred Benjamin Dispensary, Kansas City, April 18, 1932.

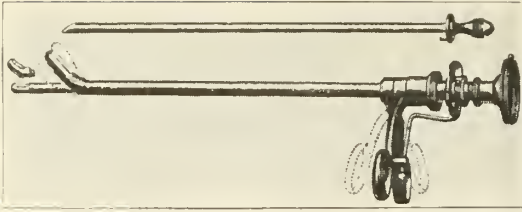


Fig. 1. Foreign body forceps. Young's model.

Were it not for numerous queer failures in diagnosis we should be inclined to concede such comment as the above to be superfluous, for it is practically self-evident that so complete an examination is always necessary for a correct diagnosis; yet, it is surprising how readily the cause of a cystitis or even a pyelonephritis (if the cause happens to be a foreign body) has been overlooked. No less a luminary than Hugh Young¹⁸ calls attention to an instance in which, owing to a hurried catheterization of the ureters for a pyelonephritis at three successive cystoscopic examinations, a sponge in the bladder was overlooked. Should this not serve as a lesson or moral to most of us "lesser lights"? Inspection via cystoscopy, then, should be done carefully, completely, thoroughly.

It would be well if roentgen ray examinations could be made whenever possible from more than one angle; no less than two radiograms should be taken in doubtful or suspected cases, as recommended by the Frenchman, Legieu.⁹ It will be readily seen also that in the diagnosis of some foreign bodies in the bladder, cystoscopic examination alone is not sufficient; for such objects may find their way into diverticula of the bladder or the sharp ends of the foreign body may become embedded in the mucosa of the tract.

In this connection, it is interesting to review precisely the meaning of the expression "foreign body"; the numerous objects inserted by male and female individuals into the bladder via the urethra, whatever the motive prompting this abnormal practice may be, form but a part of the long list included under the general heading; albeit, objects so introduced are by far the largest in number and almost endless in variety. Of considerable clinical importance are those foreign objects which gain access through traumatism, such as bullet wounds or other accidental penetration, as well as objects which, through the agency or medium of suppurating neighboring organs or tissues, migrate into the cavity of the bladder, forming fistulous tracts.

A sequestrum has been removed from the bladder by transperitoneal cystotomy; the par-

ticle of bone migrated through a fistulous tract which developed as a complication in a case of pubic osteomyelitis; this case was published by Chauvin⁴ in 1928. Another case of sequestrum of bone in the bladder was reported by L. Loeffler¹¹ in 1923. The sequestrum here was the result of caries of the symphysis and projected into the bladder, plugging the hole completely.

Strictly speaking, a calculus descending along the ureter into the bladder is a foreign body, but not within the meaning of the usually accepted interpretation of the expression. Keyes⁸ says, "foreign bodies may enter the bladder down the ureter, through its wall, or along the urethra." This would embrace, therefore, objects which have been reported as entering the bladder from loops of intestines by ulcerative processes, including such articles as a darning needle, a tobacco pipe mouth piece, a small paint brush, etc.

S. P. Bond² reports an interesting case of tacks, nails and glass found in large quantities in the bladder, these articles having presumably migrated through an enterovesical fistula involving a distal loop of ileum; the sigmoid also was perforated. This subject has been interestingly reviewed by E. W. White.¹⁷

One of the most extraordinary reports is that of I. Duncan⁴ who found a perfume bottle in the bladder of a man. Another unusual case is that of two blades of grass removed by Vincent Vermooten.¹⁶

On the other hand, bits of diagnostic instruments may be broken off within the bladder cavity or in the substance of the bladder wall or prostate gland, these offering a most difficult problem for their removal, the procedure calling not only for extraordinary skill and caution but also the greatest amount of patience on the part of the operator and undivided cooperation by the patient.

V. C. Pederson¹⁴ published an interesting article reviewing some accidents that left foreign bodies in the urinary tract; he met the problems easily and successfully and concludes that radical measures for early removal should be employed only as a last resort.

Under the caption, "Foreign Bodies," Young clearly emphasizes as factors in the causation of postoperative dysuria and infection the presence in the bladder or in the prostatic urethra of pieces of prostatic lobe overlooked by the operator during prostatectomy and left in the bladder cavity, as well as masses of detached mucosa and inspissated or partially organized blood clots, which may well be considered foreign bodies.

In this same connection one must include silk, linen or other ligatures observed in the bladder long after such abdominal operations as hysterectomy. Two cases of this character have been reported by Frank Harvey.⁷ Numerous instances have been recorded of pieces of diagnostic or other instruments which were broken off within the bladder or became embedded in the vesical or prostatic tissue, necessitating their removal; and it sometimes happens that bits of deteriorated rubber catheters break off and become lodged in the narrowed posterior urethra. This should serve as a warning to exercise the greatest caution in the use of the best made surgical instruments, to inspect them carefully before their introduction into the bladder, and to practice routine examinations of rubber catheters or other articles as to friability before their use. In a case reported by A. W. Nelson,¹³ while he was attempting to remove a hairpin from a woman's bladder, a forceps blade broke off in the cavity.

Although one finds in the literature a vast number of case reports dealing with an endless variety of foreign objects in the urogenital tract, general reviews of the subject are few. W. P. Manton,¹² speaking of the frequency of occurrence, noted 455 titles and papers on foreign bodies in the bladder from 1880 to 1916. From 1919 to the first half of 1930, inclusive, a period of approximately 12 years, there were published in the literature of the world 151 subjects and articles, or nearly 13 cases a year. Someone has said that the average for a year is nine or ten cases. In the United States Surgeon General's Catalogue, Third Series, 1897 to 1920, there are cited 187 articles. In Young's book on "Urology," published in 1926, he gives 22 as the number of cases observed in the Brady Urologic Institute. One case in five years is shown in the record of St. Mary's Hospital in our city, while at the Kansas City General Hospital for the last five years no case is recorded.

Once a foreign body enters the bladder it usually remains until removed through instrumental or operative interference, only a small percentage of objects being expelled spontaneously through the natural channel or by suppurative processes and fistulous tract formation along the avenue of the neighboring organs. It has been observed that the tolerance by the bladder of foreign bodies is remarkably strong so that such objects may remain for years without serious reaction; unfortunately, such cases are rare the general rule being that the object incites violent reaction against its

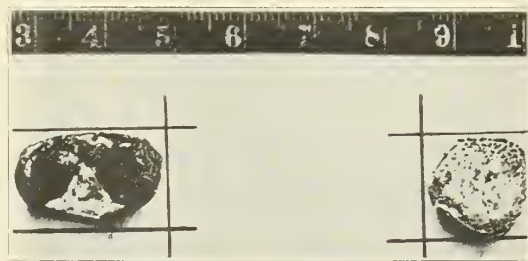


Fig. 2. Vesical calculi (uric acid) removed by cystoscopic rongeur from male bladder, per urethram. (Author's case.)

intrusion, this being manifested by irritation, infection, incrustation, stone or abscess formation, the last resulting in ulceration and the formation of a fistula.

Keyes emphasizes the liability to bacterial infection in these cases and explains the formation of phosphatic deposits by the process of the splitting up of urea, owing to the coccal infection, into ammonia and carbon dioxide. The alkaline urine resulting therefrom stimulates the gelatinizing of the mucopurulent exudate which readily embraces the phosphates thrown down in the alkaline urine, establishing a nucleus for a stone made up of layer upon layer of such deposit. He also brings up the very interesting question of the rapidity or rate with which such secondary stones grow; his conclusion is that this growth varies greatly in different individuals, citing a case of a hairpin in a girl's bladder which had remained there for more than a year with but a small amount of incrustation thereon.

Although the small, rounded or soft object in the bladder may remain "silent" for a long time, infection plays the most important role in the production of the pathological condition. Should the mucous membrane be penetrated, or should the object become embedded within the wall of the urethra or the prostatic tissue, bringing about both infection and vesical spasm or tenesmus especially at the vesical sphincter, very disastrous results may follow. A case illustrating the ill consequences of a small piece of deteriorated rubber from a catheter lodged in the prostatic urethra is related by V. L. Ferguson.⁶ This bit of rubber became tightly jammed by urethral and vesical spasm within the narrow posterior urethra so that most violent tissue reaction took place, causing not only dangerous infection—cystitis and prostatitis—but also retention, requiring suprapubic cystotomy; the condition was further aggravated by serious hemorrhage following the operative interference for removal of the small object.

It is interesting to observe that a compre-

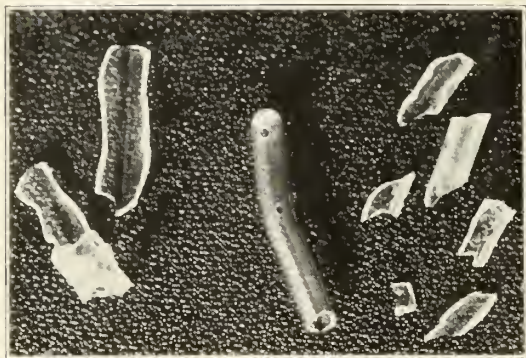


Fig. 3. Bits of glass catheter removed from female bladder; above are shown two pieces of glass irrigating tube removed from vaginal vault of same patient. (Author's case.)

hensive classification of foreign objects found in the bladder has been tabulated by Hugh Young; this classification is of considerable practical value; it may be summarized briefly as follows:

According to (1) specific gravity: those which float, and those which sink; (2) shape, size and consistency; (3) solubility; (4) opacity to roentgen ray: translucent or opaque; (5) manner of introduction: (a) through pre-existent passages, as the urethra, fistulae, etc.; (b) through wounds; (c) by immigration from other wounds or lesions; (d) through enterovesical fistulae.

The method of procedure for the removal of a foreign body located in the urinary tract will sometimes tax the ingenuity of the most skillful operator. Extraction by the lithotrite or the cystoscopic rongeur is very frequently quite feasible, while in many cases surgical interference by cystotomy is necessary. Both methods have been resorted to by outstanding urologists. Special devices have been constructed for grasping such objects as hairpins because of the possibility of engaging the loop, but the outstanding instrument is a cystoscopic foreign body extractor or rongeur forceps like that of Young or Valentine.*

For many years the French used a special instrument called a "hook" for extraction of hairpins from the female bladder; in appearance this resembled a long, thin, old-fashioned glove or shoe buttoner with a sharp little curved loop at the end and attached to a firm handle. The *American Journal of Surgery*, 5:503, 1928, contains a description of Valentine's modification of the Nitze lithotrite, which

* In the *American Journal of Surgery*, 9:329 (August) 1930, Thos. J. Kirwin describes a new cystoscopic rongeur which he claims is not only mechanically stronger but offers in addition the advantages of facilities for continuous irrigation, direct vision and a view of the grasping blades in the direct line of vision at all angles within the bladder.

consists of the addition of the modern telescope and facilities for continuous irrigation. By means of such an instrument, it is frequently possible to remove from the bladder along the natural channel hard calculi of fairly large size without crushing them; two such calculi are illustrated in figure 2. It was necessary, of course, to perform meatotomy before the extraction. The rongeur acted as a satisfactory dilator in the path of the stones and protected the mucosa against undue traumatism.

In males the cystoscopic rongeur will have to be used more frequently than in females; in women the anatomical nature and dilatability of the urethra permit of simpler procedures, except of course in the case of large encrustations or in the face of violently active infection, when radical surgery is quite plainly indicated in order to spare the bladder serious injury from the attempt at removal.

Some have tried the use of solvents such as gasoline or carbon tetrachloride for gum or wherever such solvents are indicated, but their application has been quite limited. Numerous factors play a part in the choice of the method to be adopted for removal of objects in the bladder; the character of the foreign body, its position in the bladder, its size and structure, whether in a male or female bladder, the age of the patient, the duration of lodgement in the viscus, the degree of inflammatory reaction by the urinary organs, the temperament of the patient or his willingness to cooperate with the surgeon, and the depth of penetration, if any, by the object into the bladder or urethral wall—these are but a few of the problems one must study before deciding on just the treatment or management to be chosen; on the other



Fig. 4. Skiagram of vesical calculi encrusted over prongs of hairpin. (Author's case.) Note position in the bladder and penetration of the vesical mucosa.

hand, more than one method may have to be tried before success can be attained in difficult cases. Here again the roentgen ray diagnosis is invaluable; e.g., if a pin is the nucleus for an encrusted stone it is important to know it before attempting removal by crushing.

Suprapubic or transperitoneal cystotomy is employed with marked success in most cases of large encrusted calculi, or where the foreign body offers unusual difficulty against extraction by the natural channel; prevesical section, according to Keyes, adds much to the safety of the operation of lithotomy.

In the female the extraction of a foreign body not too large to be drawn through a large Kelly endoscope, is made easy and permits of much speed without trauma to the bladder by placing the patient in the knee chest position in the manner described by Howard Kelly many years ago. In the case of ordinary objects like hairpins, pieces of glass, soft rubber catheters, twigs and many others, it is surprising to observe the readiness with which the extraction can thus be accomplished. Nevertheless, cystotomy and extraction with the cystoscopic rongeur also offer ready means of treatment.

CASE REPORTS

Case 1. A girl, aged 25, had complained of severe abdominal pains for nearly a year. The paroxysms of pain, while associated with the act of micturition, were never described by the patient as urinary, nor did she complain of frequency, urgency or dysuria, though it must be apparent that she suffered from all three symptoms. She would occasionally refer vaguely to hematuria, but would always enshroud this with doubt in its relation to her menses. She had had a right nephropexy and an appendectomy in the two years prior to my first seeing her. At the first physical examination I was startled to find two pieces of a broken glass irrigating nozzle in the vaginal canal, very high up in the vault behind the cervix; the pieces were removed. The pain elicited by digital pressure against the symphysis suggested foreign body in the bladder. It was decided to explore the bladder by cystoscopy before roentgen ray study because the patient refused to enter a hospital. At her home, by means of the No. 10 Kelly endoscope, with the patient in the knee chest position, and a laryngoscopic mirror, the bladder being distended with air, numerous pieces of a broken glass catheter were found plainly visible without any encrustations on them. They were readily removed in a few moments by means of the "alligator" forceps. The patient, while cooperating most graciously, expressed strong disbelief in my "disclosure," and persistently denied any knowledge of the method by which the catheter found its way into the viscus. However, she offered the theory that she must have been catheterized by the hospital nurse at the time of the appendix operation while she was still under the effects of the anesthetic, and the broken glass catheter was left there at that time.

Case 2 is the old story of the mysterious entrance of a hairpin into the bladder. A 14 year old girl (whose mother, upon learning of the discovery of



Fig. 5. Vesical calculi observed in figure 4; weight, 11 grams and 15 grams, respectively.

the presence of this foreign body, declared the little girl must have swallowed the hairpin) complained for over a year of the classical symptoms, paroxysmal abdominal pain, strangury, frequency; febrile attacks due to profound sepsis were frequent; several physicians had seen her and treated her for this and that. The last one before I saw her treated her medicinally for colitis and hemorrhoids, so the mother said. No history whatever pointing to the actual cause of the illness could be secured from the mother or child; until four months before I saw her the patient had been in a school for defective children because she was mentally retarded and could not articulate understandingly. Examination per rectum readily disclosed an object suspected within the bladder; roentgen ray confirmed the suspicion; two calculi of large size which had become deposited around the prongs of a hairpin were observed; one prong, owing to corrosion of the metal, had broken away from the loop; both sharp ends had penetrated the mucosa of the bladder wall. Suprapubic lithotomy was performed; the wound healed without difficulty.

Both of these cases, though interesting curiosities, serve to teach this moral: Do not delay unnecessarily a thoroughly complete, careful, cystoscopic and roentgen ray examination of any patient who has symptoms of "cystitis," that is, pain, dysuria, frequency and urgency, with or without hematuria or pyuria.

Medical Arts Building.

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SUPPURATION OF THE LUNGS

RECENT ADVANCES IN THE ETIOLOGY AND TREATMENT OF ACUTE AND CHRONIC CASES

H. I. SPECTOR, M.D.

ST. LOUIS

Pulmonary suppuration is one of the most formidable conditions with which we have to deal. It may manifest itself in the following forms: Abscess, gangrene, bronchiectasis, suppurative pneumonitis, putrid and bloody bronchitis, disintegrated tumor masses, empyema with pleurobronchial fistulae and combinations of two or more of these lesions.

The term "suppuration of the lungs" applied to the above conditions seems justified because at times it is extremely difficult to differentiate one condition from another, especially since two or more of the diseases may be found in the same lung simultaneously.

ETIOLOGY

There are numerous predisposing factors which may lead to suppuration. Perhaps one of the most important is aspiration into the tracheobronchial tree of infected material from the teeth, tonsils and sinuses. This mechanism can occur during sleep but usually follows operations on the upper respiratory tract under deep anesthesia for the removal of tonsils and teeth, or may follow operations on any part of the body. The aspirated material is especially prone to set up an infection in the lungs if the cough reflex is abolished by prolonged anesthesia or by large doses of morphine, as has been pointed out by Jackson.¹ Preexisting

bronchopulmonary pathology such as chronic bronchitis, emphysema, fibrosis of the lungs and asthma may interfere with the proper ciliary action of the bronchial tubes and thereby secondarily aid in the production of such lesions as suppurative pneumonitis, lung abscess and gangrene.

Another important predisposing cause is prolonged obstruction of a bronchus by foreign bodies, bronchial stenosis, inflammation, benign and malignant tumors and enlarged glands. Prolonged obstruction usually leads to an obstructive atelectasis and the latter not uncommonly leads to various forms of suppuration of the lungs, especially bronchiectasis.

Pneumonia was formerly regarded as a major cause of abscess formation. However, at the present time it is attributed a minor role in this connection.

Recurrent upper and lower respiratory infections are frequently responsible for such lesions as putrid bronchitis, primary lung abscess and primary bronchiectasis. Suppurative lesions may also form by extension from neighboring organs, such as the abdomen, mediastinum and pleura. Trauma may be a factor in some cases.

As to the etiologic organisms responsible for suppuration of the lungs there is at present considerable confusion. A review of the early literature on the subject reveals few studies of the bacterial flora of pulmonary suppuration. Although Veillon and Zuber² in 1898 and Rona³ in 1905 called attention to the role played by certain anaerobic organisms in the production of gangrene, the study of the bacterial flora of suppuration of the lungs was generally neglected by subsequent writers. Not until 1920 when Hartwell⁴ made cultural studies from the pus of pulmonary abscesses and found staphylococcus aureus the predominating organism was interest renewed in the study of the bacterial flora of suppurative processes in the lungs. Lambert and Miller⁵ in 1924, studying the bacteriology of abscess of the lung, found various anaerobes which they designated as gram positive bacilli, gram negative bacilli, cocci and Streptothrix. Ermatinger⁶ in 1928 found hemolytic staphylococcus aureus in 80.75 per cent of his cases. Recently, Bucher⁷ made a bacteriologic study of the pus collected directly from the bronchus of 118 cases of pulmonary abscess by means of the bronchoscope and found the streptococcus (hemolyticus, viridans and nonhemolyticus) in 79 per cent of cases studied, staphylococcus albus and aureus in 50 per cent and fusiform bacilli and spirochaetes in 22 per cent. More recently, Varney⁸ studied the bacterial flora of

From the Department of Internal Medicine, Chest Division, St. Louis University School of Medicine.

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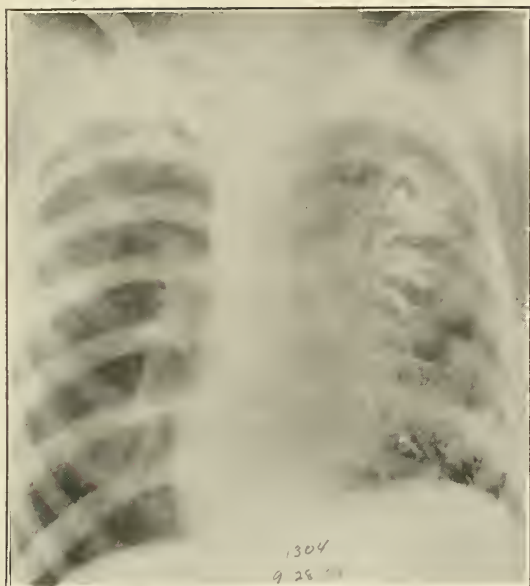


Fig. 1. Saccular bronchiectasis lower part of upper right lobe outlined with lipiodol. (Case 1, September 28, 1928.)

27 cases of chronic abscesses of the lung and found in addition to streptococci, spirochaetes and fusiform bacilli, an anaerobic organism known as *B. melaninogenicum*. He concluded that the bacterial flora of material from chronic abscesses of the lung revealed a remarkable similarity to that from infected tonsils, cervical abscesses and diseased teeth and mucous membranes. Smith⁹ was able to isolate pure cultures of spirochaeta microdentium, spirochaeta macrodentium, two strains of fusiform bacilli and four strains of vibrios from the sputum of patients suffering from abscess and gangrene, and concluded that abscesses are apparently due to the symbiotic action of a group of anaerobic organisms composed of oral spirochaetes, fusiform bacilli, vibrios and cocci. Smith¹⁰ also found the fusospirochaetal organisms in 80 per cent of the cases of bronchiectasis studied. In a most recent study Cohen¹¹ found streptococcus gamma, diphtheroid and *B. melaninogenicum* as the most common organisms in the bacterial flora of abscess of the lung.

As to the mode of entrance into the lung of the causative organisms, it will suffice to mention the two main, self-explanatory theories; namely, the aspiration theory led by Moore¹² and others, and the embolic theory led by Cutler¹³ and his associates. That a combination of the two theories may explain the pathogenesis of certain abscesses of the lung was recently pointed out by C. M. Van Allen.¹⁴

From personal observations I am inclined to the view that the greater number of abscesses

are probably the result of aspiration and that a certain number especially multiple abscesses are probably of hematogenous origin.

TREATMENT

The principle of treatment of suppuration of the lungs is, first, to establish drainage; second, to obliterate the cavity when present; third, to prevent complications; fourth, to aid in the absorption of the inflammatory exudate and, fifth, to relieve symptoms.

Drainage in abscesses and in bronchiectasis can frequently be facilitated by postural drainage. Bronchoscopy in selected cases and when performed by an experienced bronchoscopist is indicated when the opening into the bronchus is obstructed by viscid secretions or by granulation tissue. Bronchoscopy is always indicated in foreign body cases. Abscesses that do not drain well and especially those situated at the periphery of the lungs will require surgery, usually incision and drainage. Adequate drainage will aid in the closure of the cavity and will avoid complications such as hemorrhage, brain emboli and brain abscesses.

Phrenicectomy, thoracoplasty, partial or complete, lobectomy and cauter pneumectomy may be of value in certain selected cases and in the hands of certain selected surgeons.

Pneumothorax for the treatment of lung abscesses and bronchiectasis has been advocated by Tewksbury¹⁵ and others, especially in abscesses that have ruptured into a bronchus and in those situated near the hilum region. Pneumothorax treatment is definitely counterindi-

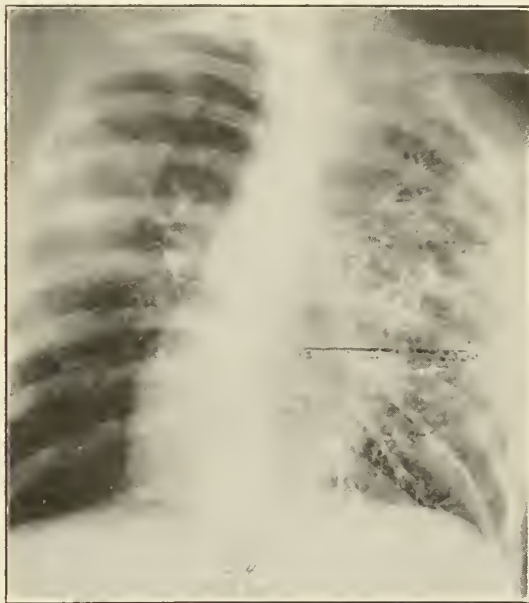


Fig. 2. Considerable healing. Same technic of injecting lipiodol as used in figure 1. (Case 1, December 14, 1928.)

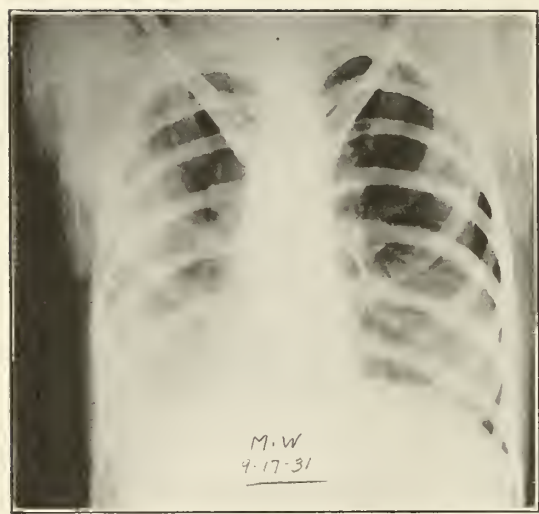


Fig. 3. Fusospirochaetal abscess of left lower lobe complicated by effusion. Epileptic girl aged 17. (Case 2, September 17, 1931.)

cated in peripheral lung abscesses because of the danger of rupturing abscess into the pleural cavity. This form of therapy has not impressed me.

From my own experience (table 1), solitary lung abscess will heal with conservative medical treatment alone since 84 per cent of simple abscess seen at St. Mary's Infirmary during the last six years were either improved or cured. In contrast, as pointed out in a previous communication,¹⁶ acute multiple multilobar lung abscesses do not respond to any form of treatment and usually have a fatal termination.

The most that can be said about the efficacy

of surgical treatment of bronchiectasis is that it is still in the stage of experimentation.

Complete bed rest during the acute stage of the disease and partial bed rest after the acute symptoms have subsided will materially aid in the absorption of the inflammatory exudate and lead to resolution. Putrid bronchitis and suppurative pneumonitis usually heal with bed rest treatment alone or when assisted with postural drainage.

Symptomatic treatment is indicated and helpful in all forms of suppuration. In addition to complete bed rest, nourishing diet and fresh air and sedative cough mixtures should be given. Expectoration should be encouraged as much as possible and the cough reflex should not be abolished by the use of narcotics. Heliotherapy has been advocated by some writers. The "thirst" treatment for the purpose of mitigating secretions is used in European countries.

SPECIFIC MEDICINAL TREATMENT

Numerous drugs have been offered for the treatment of lung abscess. Lipiodol has been recommended as a therapeutic measure for lung abscess and bronchiectasis. I have seen favorable results (figs. 1 and 2) and unfavorable results following the use of lipiodol. Generally, it is felt that this drug is counterindicated in the acute cases.

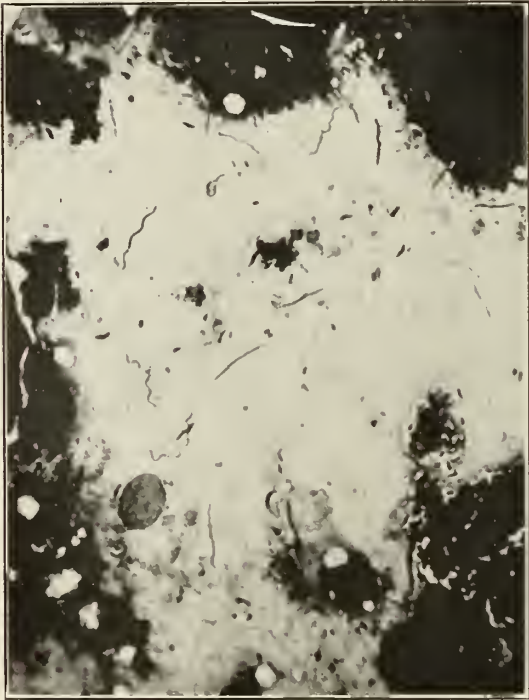


Fig. 4. Spirochaetes and fusiform bacilli isolated from sputum. (Case 2.)

Table 1. Lung Abscesses. Fifty-Eight Cases

Solitary abscess, 32 cases		
Cured	18, 56%	Improved or cured, 84%
Improved	9, 28%	
Unimproved	1, 3.5%	Autopsy in 2 cases
Died	4, 12.5%	
Total 32	{	Medical treatment in 30 cases
		Rest and postural drainage in all
		Neosalvarsan in 6 cases
		Lipiodol in 6 cases
		Surgical in 2 cases (incision and drainage)
Abscesses complicated by gangrene, 7 cases		
Cured	1, 14.3%	Small doses of neosalvarsan
Died	{	Neosalvarsan and incision and drain-
		age in 2 cases
		Neosalvarsan alone in 1 case
		Transfusions in 3 cases
(Autopsies 4)		
Multiple abscesses, 15 cases		
Cured	{	Small doses of neosalvarsan in 1 case
		Postural drainage in 2 cases
Died	{	Rest and postural drainage only treat-
		ment in 10 cases
		Large doses of neosalvarsan in 2
(Autopsies 10)		cases
Lung abscesses secondary to cancer of the lung, 4 cases		
Died	4, 100%	

Vaccine therapy has its followers. Serum therapy finds its greatest advocate in Vincent.¹⁷ In a recent article he reports excellent results in the treatment of gangrene of the lungs with antigangrenous serum. Other drugs recommended are, potassium iodide, calcium chloride, methenamine, emetine, antimony, bismuth and the arsenicals, especially salvarsan, sulpharsphenamine and neosalvarsan.

It is amazing to find that until very recently writers generally failed even to mention the arsenicals in their discussion of treatment of suppuration of the lungs. Due to the accumulation of evidence strongly pointing to the potential pathogenicity of the mouth anaerobes, and due to the possibility that the various forms of acute and chronic suppuration of the lungs, such as lung abscess, gangrene, suppurative pneumonitis, bronchiectasis and putrid bronchitis, may merely represent different phases of the disease fusospirochaetosis, more attention is being given to this drug. For this reason the arsenicals have been used more freely in the last few years. At the present time there is considerable disagreement as to its efficacy. Kline¹⁸ who champions the use of the drug in intensive doses (.9 gm.) considers it a specific in gangrene of the lung. Miller,¹⁹ on the other hand, says the results of treatment with the arsenicals were disappointing. It is of interest to mention that a review of the literature shows that intensive doses of the drug have been generally used.

We were at first unfavorably impressed with the drug when we used large doses in two cases of abscess complicated by gangrene. In both instances we noted unfavorable reactions and the patients died. Subsequently, we decided to try small doses of neosalvarsan in the treatment of patients with suppuration of the lungs in whose sputum spirochaetes and fusiform bacilli were found. The initial dose was .15 gram of

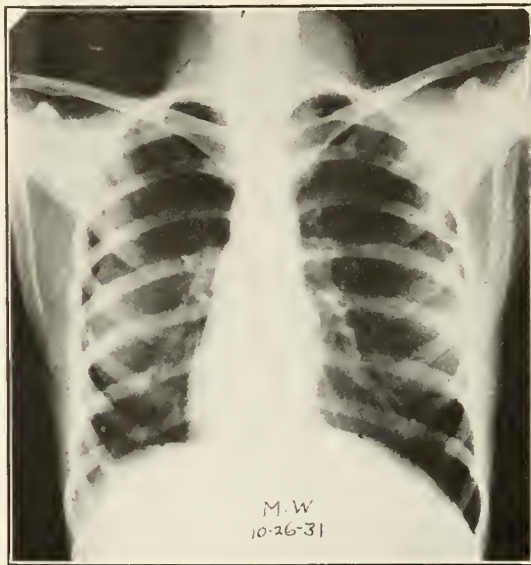


Fig. 6. Complete healing of abscess and absorption of pleural exudate. (Case 2, October 26, 1931.)

neosalvarsan repeated every four days. If reaction followed, the dose was reduced to .1 gram or .05 gram of neosalvarsan. Only occasionally was the dose increased to .3 gram.

Our results of treatment with small doses of neosalvarsan in 25 cases are seen in tables 1 and 2 and in figures 3, 4, 5 and 6. Generally, we noticed that the sicker the patient the less tolerant he was to neosalvarsan.

Table 2. Miscellaneous Forms of Suppuration of Lungs. Twenty-Five Cases

1. Suppurative pneumonitis, 4 cases.			
Cured	3, 75%	} Small doses of neosalvarsan	
Improved	1, 25%		
2. Bronchiectasis, 12 cases.			
Improved	10, 83 1/3%	} Rest Lipiodol Postural drainage Neosalvarsan in 1 case	
Unimproved	1, 8 1/3%		
Died	1, 8 1/3%		Hemoptysis. Autopsy
3. Putrid bronchitis, 4 cases.			
Cured	2, 50%, acute cases	} Small doses of neosalvarsan	
Improved	2, 50%, chronic cases		
4. Tuberculosis complicated by nontuberculous suppuration, 5 cases.			
Improved	4, 80%	} Small doses of neosalvarsan	
Died	1, 20%. miliary tuberculosis		

CONCLUSION

In view of the fact that the accumulated experimental and clinical evidence strongly suggests the possibility that the mouth anaerobes may under certain conditions be aspirated into the lungs and assume a pathogenic role, it becomes almost compelling, in conclusion, to em-

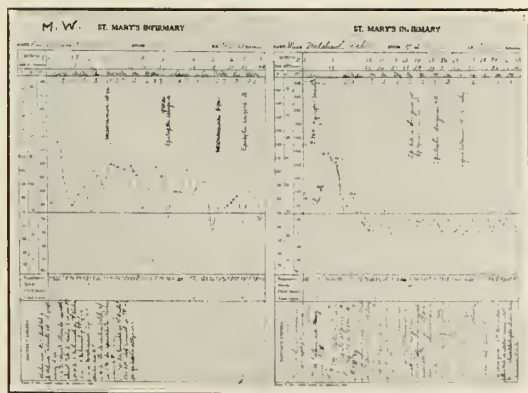


Fig. 5. Temperature before and after neosalvarsan. (Case 2.)

phasize the importance of mouth hygiene in the prophylactic control of this disease. It is our belief that if more attention would be given to the mouth before any operative procedures are instituted we would have fewer suppurative lesions of the lungs and avoid "the slowly developing drama of a bronchiectasis or the rapid tragedy of a gangrene."

University Club Building.

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STREPTOCOCCIC MENINGITIS

Matthew S. Ersner and Theodore H. Mendell, Philadelphia (*Journal A. M. A.*, Nov. 5, 1932), present two cases of hemolytic streptococcic meningitis of otitic origin in which cure by intracarotid treatment was obtained. Mastoidectomy was performed in both, and blood transfusion, frequent lumbar taps and antistreptococcic serum were used as adjuncts in the treatment. Cerebral dehydration was used to great advantage in both cases. Energetic nasal treatment is essential if a successful outcome is to be attained. Forty-six cases of streptococcic meningitis with recovery are listed in the literature prior to this report. Whenever meningitis complicates an otologic condition, intracarotid therapy after the method of Kolmer is advocated early without delay, along with other treatment as a simple harmless measure offering some hope in the treatment of an almost hopeless disease.

ANGINA PECTORIS WITH AND WITHOUT HEART DISEASE

A CRITICAL ANALYSIS

A. SOPHIAN, M.D.

KANSAS CITY, MO.

Angina pectoris is a clinical entity characterized by pain over the heart. Much has been written on the cause of the pain but pathological studies have failed to disclose the exact nature of angina pectoris.

It is evident that there are a number of pathologic states of the heart characterized by heart pain. Clinicians and pathologists now generally accept the theory that disease of the coronary arteries is frequently characterized by heart pain. In this country true angina pectoris has been classified as essentially a disease of the coronary arteries.

Angina pectoris has been commonly divided into the true form and the so-called pseudo or false pain. Since angina pectoris is a clinical entity, characterized by pain over the heart, and since the pain over the heart is just as real or severe whether or not the primary cause of the disease be in the heart proper, it is obvious that a classification dividing angina into the real and the pseudo is erroneous. It would be equally correct to classify the symptom headache into the real headache when caused by tumor of the brain and false headache when caused by intestinal or renal intoxication. Therefore, it would be more reasonable to consider angina pectoris as one common symptom caused by many different agencies, either from within the heart or from without. A review of some of the main theories of angina pectoris shows the confusion which surrounds this important condition.

Sir Clifford Allbutt¹ has persistently favored the aortitis theory, explaining the pain as being produced by irritation of the nerve end plates in the ascending arch through stretching the aorta by increase of arterial pressure; death during anginal attacks is explained by reflex vagal inhibition with resulting heart failure in individuals with diseased myocardium and coronary arteries.

W. D. Reid² has offered a modification of Allbutt's theory. He suggests failure of reflex dilatation of peripheral blood vessels, which is followed by an acute rise of pressure in the aorta and in turn the heart.

Myocardial exhaustion as a cause of angina has been a widely accepted theory, but it does not explain the mechanism of the pain nor offer an explanation for those cases of angina with normal myocardium.

From Menorah Hospital, Kansas City, Mo.

Sir Thomas Lewis³ has favored the theory of relative ischemia of the heart muscle brought about by inadequate blood supply under different conditions of myocardial activity. He suggests that the ischemic pain arises from a working muscle and that stimulus is derived from physiologic process in the muscle fiber.

Yandle Henderson⁴ recently offered an interesting explanation. He suggests that the accumulation of excessive lactic acid and other fatigue products in the heart muscle, as a result of incomplete oxidation in heart disease, produces ischemia and muscle cramp. He suggests that relaxation of any muscle occurs only after complete oxidation of lactic acid into carbon dioxide. Applying this idea therapeutically, he suggests the inhalation treatment with concentrated carbon dioxide in order to produce myocardial relaxation with the resulting increased blood supply. This ingenious theory unquestionably has some merit, although the carbon dioxide treatment in my experience has given quite varied results.

Alexander Lambert⁵ has stressed the neurogenic theory for cardiac pain. It is based on the correct assumption that only stimulation of

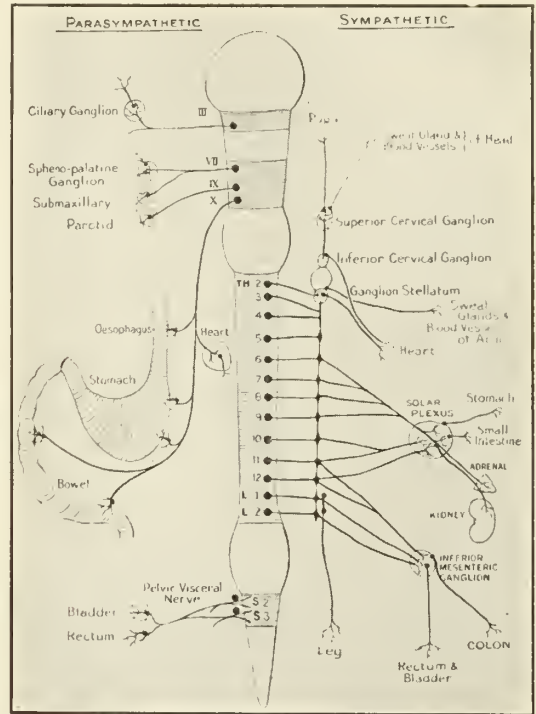


Fig. 2. Diagram of the nervous elements which make up the sympathetic or splanchnic system (Baglioni). R. R., spinal cord; h. W., dorsal root; v. W., ventral root; sp. N., spinal nerve; r. a., white ramus communicans; r. g., grey ramus communicans; G. st., lateral chain; G. vert., ganglia of lateral chain (vertebral ganglia); G. sol., solar ganglion; p. G., peripheral ganglia (terminal); G. mes. inf., inferior mesenteric ganglion; D., intestine; B., bladder. The left side of the figure shows the peripheral cutaneous system (At., arterial walls; Ar., erector muscles of hairs; dr., gland cells). The right gives the peripheral splanchnic system (Ar., arterial walls; dr., gland cells; p., Pacinian corpuscles).

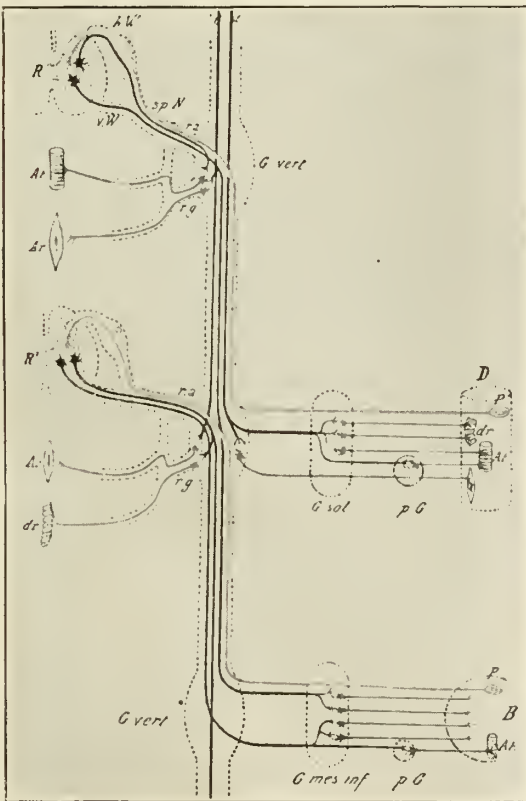


Fig. 1. Scheme of the general arrangement of the autonomic nervous system, the distribution of the sympathetic and parasympathetic portions being contrasted on the two sides of the diagram. [N. B. Illustrations taken from "Sympathetic Nervous System in Diseases," by Wm. Langdon Brown, Oxford Publishing Co., 1920.]

nerves can produce pain. The assumption that coronary spasm, or spasm from anemia of cardiac muscle alone, causes pain does not take into consideration the fact that only nerve irritation can produce pain. Experimental work indicates that cardiac pain arises from the mechanism of the autonomic nervous system; that pain originates in the sensory nerve endings of the cardiac vascular system and in the wall of the adjacent aorta; that pain occurs when there is an abnormal distention of the adventitial coats of the aorta and coronaries by pressure on nerves.

The autonomic nervous system innervates the heart through the efferent nerves by both the vagus and sympathetic systems, and the sensory nerves through the sympathetic system alone. The sensory nerves pass chiefly through the stellate ganglia and join the rami communicantes, the posterial spinal nerve roots and traversing their ganglia to the spinal cord pass upward by the spinothalamic tract through the midbrain to the centers of the autonomic nervous system.

The vagal fibers are the inhibitors of the heart action and the constrictors of the blood vessels, while the sympathetic fibers are the accelerators and dilators of the blood vessels.

Cardiac pain from peripheral reflex origin occurs through this neural mechanism, which is susceptible to central or peripheral or reflex excitation; thus the effect of emotion, so well recognized as an important cause of anginal attacks, has its explanation in the excitation of the central nervous system, arousing the sympathetic system to activity, in turn affecting the organs which this system innervates.

The reverse also occurs in true heart disease with pain which may produce remote reflexes in other organs; thus at times, salivation, sweating, bloating, and intense belching of gas, lacrimation, pupillary dilatation, sometimes pain referred to the neck and again the feeling of a tight band around the neck with choking sensation; at times testicular pain or desire to urinate. The intensity of cardiac pain apparently causes an intense general sympathetic discharge, producing reflex action in both the cranial and sacral portions of the autonomic system.

The so-called pseudo-angina may be caused by the following, viz., (1) reflex irritation to the heart from disease of the visceral organs, (2) pressure or irritation of the sympathetic fibers to the stellate ganglia, and (3) by direct central irritation of the vegetative nervous system.

Cardiac pain is especially frequent in the presence of pelvic disease in women. The history presented by a young woman of 29 who at 22 was operated on for a right cystic ovary, and two years later developed disease of the left ovary and with it heart pain, is not very unusual. The left ovary became at times very painful and tender, especially in relation to the menstrual period. Soon after this ovarian lesion developed the patient began to complain of attacks of severe angina with radiation to the back and left arm and much tenderness over the precordium. The attacks were much worse at the menstrual period. The effect of exertion was very uncertain, but there was a definite relationship between the severity of the pelvic pain and the degree of angina. Clinical examinations and repeated electrocardiograms were normal. Cervical ganglion radiation therapy was given with almost complete relief of angina for a year. The pelvic condition during this period, however, was also quiescent. A flare-up of the pelvic condition a year later was accompanied by a return of the cardiac pain. Cervical ganglion radiation was again followed by relief of the angina.

In young women with normal hearts, reflex neural relationship between the pelvic disorder

and the cardiac pain can be strongly suspected. In older women, with myocardial and coronary changes, it is much more difficult to differentiate the independent concurrent attack of angina pectoris from the reflex cardiac pain arising from the pelvic disorder. It presents the same baffling problem which confronts one in the differentiation of gallbladder colic accompanied by angina, to be discussed later.

A not uncommon complaint of angina follows pelvic operation in women. In two recent cases severe angina developed after hysterectomy in one case and uterine suspension in the other. In each instance the pain disappeared in a few days. Each patient had a normal heart to clinical and electrocardiographic examination. Angina with normal heart also may at times accompany normal menstrual cycles and disappear with the menses.

The internal sex organs in the female receive no efferent fibers from the sacral nerves. They are supplied by fibers which pass by the sympathetic by way of the inferior mesenteric ganglia and hypogastric nerves. This innervation through the sympathetic nervous system is parallel to the sensory innervation of the heart through the sympathetic nervous system. The question is naturally raised, why disturbances of organs distant from each other though innervated by similar branches of the autonomic nervous system should have any relationship. However, there are many parallel disturbances in the body. For example: paralytic ileus, which we now recognize as the result of serious disturbance of the vegetative nervous system, occurs not only from direct irritation of the fibers supplying the intestines, but also occurs as a complication of pneumonia, through irritation it is believed of the respiratory branches of the autonomic nervous system, reflected to the abdominal branches of this system.

Recognizing these data, it is justifiable to construct a picture beginning with pelvic ganglion irritation accompanying pelvic disease or congestion, and ultimate reflex transmission through the sympathetic nervous system, through the stellate ganglia, to the heart. It is hard to explain why left-sided ovarian pain, or any ovarian pain, should have this selective reflex action for the cardiac nerves.

The association of gallbladder pain with cardiac pain has long been recognized. At times, the resemblance may be so close as to make the differentiation impossible. It is true but not necessarily so that disorders of both organs may be present in the same individual. It is also true that a considerable percentage of the cases of gallbladder disease show coronary and myocardial disease.

It is however significant that all observers

stress the great difficulty in many instances of differentiating the pain, and it is especially significant that correction of the gallbladder disease is frequently followed by a disappearance of cardiac pain.

The nerve supply of the gallbladder is derived from a cystic branch of the hepatic plexus of the thoracolumbar outflow of the sympathetic nerves and from the left vagus.

It is strongly suggestive that the attacks of gallbladder pain associated with cardiac pain are not caused by independent disease in the separate organs, but rather by irritation in the gallbladder with reflex passage of the nerve impulse through the vegetative system in the spine and through the stellate ganglia to the heart. It is impossible of course to have independent attacks, but the former explanation fits in much more closely with the facts.

Cases of heart pain resulting from central irritation of the vegetative nervous system are suggested by available information although extremely difficult to prove definitely.

White⁶ described a few cases of physiologic bundle branch block in young healthy individuals. He considered the condition to be a direct result of vagotonia. Inhibition of the vagus by atropine or exercise promptly resulted in a normal electrocardiogram. Likewise, the observation of Eppinger⁷ suggests that the heart pain may be a direct result of vagotonia. It is generally agreed that the sensory fibers to the heart are supplied by the sympathetic system; however, it will be recalled that the two component parts of the nervous system act in opposition to each other; thus any disturbance in the one indirectly affects the other.

A recent case of heart pain offers interesting speculation. A young man of 22 developed frequent attacks of loss of consciousness. It was thought at times the attacks were accompanied by serious disturbance in rate and rhythm with cardiac standstill. Physical examination was entirely negative and electrocardiogram was normal. After two years the attacks, obviously epileptic, became more frequent and severe; accompanying heart pain developed. The heart pains like the spells were periodic and followed the epileptic spells. It was impossible to obtain an electrocardiogram during a spell, but a tracing during a normal period was still perfectly normal.

Many observers consider that epilepsy in some forms is a disturbance of the vegetative nervous system, or vagotonia of central origin. The coincident attacks of cardiac pain and epilepsy suggest a common central origin.

Lesions involving the stellate ganglia present evidence of disturbance of the innervation of the heart and lungs. A not infrequent disorder

is that brought about by direct pressure from cervical rib or rudimentary enlarged seventh or sixth cervical vertebral transverse process. In these cases the pain is referred along the course of the brachial plexus either to the arm, or may be classically anginal and referred down the arm in the usual manner. Posture plays an important part in the production of pressure symptoms, especially at night or during the day with the arm carried in certain position. Roentgen ray diagnosis is important.

The so-called true angina pectoris may occur from irritation of any part of the nervous mechanism of the heart. It may come from irritation of the peripheral nerve endings in the heart proper, therefore an accompaniment of heart disease, as in coronary, myocardial and aortic disease. Cardiac pain however may also occur in normal heart muscle, as in the case of athlete's heart after violent exertion.

It is recognized that cardiac pain associated with cardiac disease occurs in later life when damage has developed in the heart and its vascular system. It has been suggested that as the result of incompetent heart muscle there occurs an increasing coronary congestion and finally dilatation of these arteries with adventitial stretching, which in turn it is thought produces cardiac pain through stimulation of the afferent sympathetic nerve endings.

It has been shown that aortic pain follows the same nerve pathways as pain from the heart and that the sensory nerve endings of the aorta and the coronary arteries lie in their adventitial coats; that stretching the aorta produces pain; that pain to a greater degree likewise occurs after stretching and distribution of smaller arteries, which are more sensitive than larger arteries.

It is a well-known fact also that serious coronary disease may be present without cardiac pain. Many years ago Lauder Brunton attempted to differentiate right from left coronary disease by absence of pain in the former, and the presence of acute severe breathlessness. This differentiation between right and left coronary disease does not hold true, but it is true that disease of both coronaries, even with thrombosis, may occur without pain but with varying degrees of dyspnea.

Herrick⁸ has suggested that there may be some less sensitive or silent areas in the heart to account for the absence of pain. Recently Nathan Smith Davis⁹ suggested that the explanation may be the more gradual progressive narrowing of the arteries by sclerotic process, and the formation of areas of anemic infarction with absolute ischemia.

The eradication of both stellate ganglia makes insensitive all cardiac and aortic tissues

as far as the left subclavian. It is the application of this knowledge which has led to the operation of section of the cervical sympathetic nerves; of paravertebral alcohol injection, and of radiation of the cervical ganglia to therapeutically control heart pain.

The treatment of cardiac referred pain from reflex origin must of necessity take into consideration the treatment of the primary disease. This is very effective in many instances, especially so in gallbladder surgery and to a lesser degree after pelvic surgery.

A measure of considerable benefit is the radiation treatment of the stellate ganglia. This treatment has been used principally for cases of coronary disease; however, the writer has used this method similarly in the treatment of cardiac pain of general origin. The first report of paravertebral irradiation for angina pectoris was made by Groedel in 1923; scattered reports from many countries have appeared since then. A comprehensive report on 16 cases so treated with complete review of the literature was made by Sussman¹⁰ in 1930.

All reports speak decidedly for relief of attacks of angina pectoris by the radiation treatment. The writer has used this method since 1930 in the treatment of all forms of angina pectoris. Forty cases were treated, of which 15 were coronary disease treated by Dr. Ira Lockwood and the balance by Dr. David S. Dann. The last 25 cases included many of the so-called pseudo-angina group. The results correspond essentially to the reports of other workers in the relief of pain, either complete or partial, accompanied by general improvement in most cases. The pseudo-angina group showed most improvement. At times a second series of radiation treatment was necessary.

The most recent technic employed by Dr. Dann follows: Kilovolts, 123; milliamperes 5; filter 4 mm. aluminum or $\frac{1}{4}$ copper; distance 40 cm.; portal 10 x 10 cm.; areas treated, cervicodorsal region anteriorly and posteriorly; r units 500 to each side dividing the dose into daily fractions, usually 6, i. e., 3 anteriorly and 3 posteriorly.

SUMMARY

In its final analysis angina pectoris is merely a syndrome of precordial pain. It is suggested that the pain proper has one common physiologic explanation, whether or not the pain arises from disease of the heart or be reflexly referred to the heart in the manner previously discussed. The neurogenic explanation can meet the physiologic and anatomic requirements. The production of pain in the heart region may arise from irritation of final nerve end filaments in the heart itself; by irritation along the course

of the nerves and stellate ganglia; by central irritation and by reflex irritation in other branches of the sympathetic nervous system, as in the case of visceral disease.

702 Argyle Building.

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CONSTITUTIONAL TREATMENT OF OCULAR LUES

M. L. GREENE, M.D.

ST. LOUIS

Much has been written about the need of early recognition and vigorous treatment of ocular lues but very little stress has been laid on exactly how these cases should be treated, and what little has been written is so conflicting as to make it certain that no method can be accepted as a standard procedure in the treatment of this condition. DeSchweinitz, for example, states that in syphilitic optic atrophy the usual remedies are indicated, but mercury is useless on late cases and, while salvarsan or neosalvarsan exercised no detrimental effect on a healthy optic nerve, he maintained that salvarsan was deleterious in tabetic atrophy. He states, however, that recently this contention has been set aside because of observations on record tending to show that neosalvarsan if used early and while color perception is still good represents a therapeutic agent of value in the treatment of tabetic atrophy.

Fuchs stated that in syphilitic optic atrophy energetic treatment with salvarsan combined with mercury is indicated, and if salvarsan appears to aggravate the condition the indication is rather to push than to discontinue the remedy.

Osler was much more guarded in his statements regarding the use of arsenicals in ocular conditions and said that changes in the eye-ground always suggest caution and may be a

contraindication to their use. Ehrlich spoke of the optic nerve as a possible site of special susceptibility.

The optic nerve is more susceptible to toxic influences than any other nerve tissue because the blood vessels pass through the center of the nerve so that all blood borne infections can easily reach it and unlike other nerves it is deprived of its protective sheaths. Many believe that when a Herxheimer reaction occurs and the toxins of the dead spirochaeta are thrown into the blood stream a swelling of the optic nerve ensues, and the compression in the bony optic foramina is the chief factor in the destruction of the nerve tissue.

Stokes, in speaking of syphilotherapy of the eye, sounded the proper note when he called attention to the damage done by improper treatment of syphilis. One group treats palliatively rather than curatively; another group goes to the other extreme and loses sight of the damage that very intensive methods may inflict on special and vital structures. Stokes believes treatment should not be begun, at least not with shock-producing drugs such as arsphenamine, until the entire condition of the patient has been fully evaluated with reference to syphilis.

Practically this procedure has been followed during the last few years at St. Mary's dispensary. A luetic patient is examined in the medical clinic for evidence of involvement of special structures. Where it seems indicated, a neurological examination is made and then an eye examination. Thus we ascertain if there is any evidence of luetic eye disease and are able to watch the effect of antiluetic therapy. It is thus possible to study the effect of various therapeutic agents on cases that have already developed eye complications and also to see if these eye complications appear at a later stage while the patient has been on antiluetic treatment.

In going over the literature on the treatment of syphilitic eye diseases, Chambers reports that over 90 per cent of the writers believe in using arsenicals, mercury and iodides combined. In the treatment of all forms of syphilitic eye disease, except syphilis of the optic nerve, we have found that the best results are obtained by the use of arsenicals in conjunction with mercury and the iodides. In the treatment of interstitial keratitis and in syphilitic uveitis we crowd the arsenicals. We have not, to my knowledge, seen a single case develop a Herxheimer reaction except when the optic nerve was involved and, while a Herxheimer reaction may appear in the cornea and is quite frequent in the uvea, such reaction rarely produces permanent injury to ocular function.

A survey of the literature indicates that a large majority of ophthalmologists today advise the use of arsenicals in all eye conditions except those involving the optic nerve. The consensus of opinion seems to be that arsenicals in the treatment of lues do not produce any reaction in normal nerves. I have encountered no case where I could definitely state that a Herxheimer reaction had occurred in a normal nerve as a result of arsenical therapy, but there are many who believe that a Herxheimer reaction occurs in every case of neurosyphilis and that some reaction occurs in the nerve of every tabetic treated with arsphenamine.

Lamb states that optic atrophy is the cause of 23.1 per cent of blindness in the City of St. Louis. Certainly lues must be a great factor in the production of the atrophy in a large percentage of these cases. With so many cases of luetic atrophy there should be some uniformity of opinion regarding the treatment, yet we find therapy varies from total abstinence to very vigorous use of arsenicals. It is very questionable whether both procedures can be right. Recently there has been a growing tendency to use arsenicals and continue them despite a Herxheimer reaction. Numerous cases of sudden blindness have been reported following the use of arsphenamine in the treatment of syphilitic optic neuritis, many of the cases going on to complete optic atrophy.

Sheehan reported a case in which a patient suffered marked loss of vision becoming almost blind following Swift-Ellis treatment. Finoff reported a case of bilateral neuroretinitis appearing in a patient treated with arsphenamine. Benedict and O'Leary detected fresh optic nerve inflammation arising after arsenical treatment.

In the last three years four cases have come to the clinic for examination with a history of sudden loss of vision following an injection in the arm, presumably arsphenamine or neoarsphenamine; and very frequently particularly among the colored patients there is a history of gradual failure of vision after injections in the arm. Many of these cases should probably be classified as latent lues and would, I believe, be better off if untreated. I recently saw such a case.

REPORT OF CASE

Mrs. L. M., colored, aged 45, was examined at one of the clinics. During the course of the general examination it was found that she had a positive Wassermann. Antiluetic treatment was started. After the first injection of neosalvarsan the patient stated that her vision became very poor; five more injections were made. The injections were begun in September and when I saw her in December she had a complete optic

atrophy with china white disks and vision in each eye was only light perception.

I believe this patient would have been better off if she had been untreated or treated with only mercury and iodides. The patient said vision was good before the injections were started. Unfortunately, there was no record in the clinic to show that an eye examination had been made before the injections were started.

During my internship I recall a case of juvenile tabes under the care of a neurologist for several years and despite a colloidal gold curve significant of tabes, she had only a slight suggestion of tabetic gait, a suggestion of Rombergism, only slight pallor of the temporal portion of each disk and vision of 20/30 in each eye. The neurologist had been very careful to avoid arsenicals, but one day an assistant ordered an injection, presumably on the theory that all cases of lues should have vigorous treatment. Immediately following the injection the tabetic gait became very marked, a marked Romberg developed, both disks became pale and the vision dropped below 20/100 in each eye.

Experiences such as these have led us to make a very careful examination of every case of lues, to establish no routine procedure of treatment in ocular lues and to treat each case as the clinical manifestations warrant. If there is the slightest suggestion of nerve involvement the fundus is frequently rechecked; if a beginning atrophy or neuritis is established bismuth is substituted. I believe the therapeutic value of bismuth has often been underrated. A patient whom I recently saw for Dr. Hardesty, complained of marked and sudden loss of vision. There was a beginning optic neuritis in each eye with vision of 20/40 in the right eye and 20/75 in the left eye. The patient had been on antiluetic treatment of mercury and bismuth, but a month previously she had been given a rest period because her gums were sore. A general examination was ordered but at once an injection of bismuth was given and the following day, twenty-four hours after injection, the neuritis was much less marked and the vision was 20/15 in the right eye and 20/25 in the left eye. A second injection was given two days later. Four days from the time I first saw her there was little evidence that a neuritis had existed and the vision was 20/15 in each eye.

Several cases in the clinic with marked optic atrophy when first seen have had no further loss of vision and one or two have shown slight improvement over a period of two or three years on combined treatment of bismuth, mercury and iodides. I have had very little experience in the use of tryparsamide and little has been written about its use. Many who

have used tryparsamide frequently regard it as a very valuable aid in the treatment of lues, but they say it must be used cautiously and its effect watched very closely.

There is still too great a tendency to regard the patient with a negative Wassermann as being nonsyphilitic and often even though the ocular condition resembles a syphilitic involvement. I recently saw such a case. An ophthalmologist had said the condition resembled the optic atrophy found in tabes but probably was not syphilitic because three Wassermanns were negative. I ordered antiluetic treatment with bismuth, mercury and iodides. Later I found that the patient's wife was a tabetic and that the patient had a positive spinal fluid and a tabetic colloidal gold curve, as well as having been diagnosed an early tabetic in the neurological clinic.

In much of the recent literature on antiluetic therapy considerable stress has been laid on the value of arsenicals, iodides and mercury in the treatment of nonspecific conditions. Whether this treatment acts as a tonic, as an alterative, or whether some of these conditions are actually luetic and have negative Wassermanns but respond to antiluetic treatment, I do not know.

SUMMARY

1. Early and vigorous treatment must be started in all cases of ocular lues.
2. Arsenicals are the best therapeutic agents in the treatment of ocular conditions aside from optic nerve involvement.
3. A negative Wassermann is not conclusive evidence that the patient is not syphilitic.
4. Arsenicals in the treatment of optic atrophy or neuritis must be used with great caution.
5. Many cases of latent lues would do better if arsenicals were not used.
6. In acute luetic ocular conditions palliative treatment with mercury by mouth or small doses of iodides by mouth is inadequate. Such procedures have been criticized and the criticism is justified.
7. Antiluetic treatment is often of great value in the treatment of apparently nonluetic conditions.

706 Missouri Building.

H. S. Gradle and Walter Ackerman, Chicago (*Journal A. M. A.*, Oct. 15, 1932), report that in normal young blue-eyed persons, the pupil reacts in accordance with the following terms: (a) On illuminating the eye, there is a latent period of 0.1875 second. (b) This is followed by a primary contraction of the pupil lasting 0.4365 second at the rate of 5.48 mm. per second. (c) Then there comes a secondary contraction of the pupil lasting 0.3125 second at the rate of 1.34 mm. per second. (d) When the illumination is removed, the pupil starts to dilate at the rate of 0.95 mm. per second.

TREATMENT OF CHOREA

G. WILSE ROBINSON, M.D.

KANSAS CITY, MO.

The medical profession is considered by members of the profession as being very progressive, and to some degree it is a progressive profession. We are, however, guilty of being a trifle lazy mentally. We are quick to accept the statements of pharmaceutical houses who detail us with a so-called new synthetic remedy with good advertising literature, and the druggists are flooded with prescriptions almost before they have time to stock up with the article. Why should the medical profession thoughtlessly rush to prescribe a new remedy just because the manufacturer says it is good?

In the treatment of chorea we have for many years been following in the footsteps of an English quack who confessed on his deathbed that his secret remedy for chorea was composed chiefly of arsenic. So physicians since his time have been regularly prescribing arsenic in some form, chiefly Fowler's solution, as a foundation of their treatment of chorea, for no reason at all excepting that their grandfathers prescribed it and apparently giving no thought as to whether arsenic helps the patient. In fact, arsenic is of no real benefit to the choreic patient and may be harmful. Among the harmful effects we know that a peripheral arsenical neuritis may develop, even several weeks after the treatment has been stopped. In small doses, arsenic may have a tonic beneficial effect in some cases of asthenic chorea, but at no time should heroic doses be given. The choreic movements may stop while arsenic is being given, and they may stop if nothing is given, but I have seen chorea continue over weeks and months while arsenic was given regularly.

There are two main types of chorea: (1) Chorea major, or Huntington's chorea, a progressive and incurable disease. (2) Chorea minor, sometimes called St. Vitus' dance, Sydenham's chorea and rheumatic chorea. It is the latter form of chorea, chorea minor, that I am discussing in this article.

The name of St. Vitus' dance should be discarded. This term was originally applied to a dancing mania prevalent in Germany in the fifteenth century and has been seen more recently in the orgies of such sects as the Shakers. It is an hysterical affection and bears no resemblance to the disease to which Sydenham gave the name chorea in 1686. Nor is the so-called hemiplegic chorea of children true chorea. The tics and habit spasms of children may or may not be manifestations of true chorea. Sydenham's chorea is an affection of

childhood. It occurs much more frequently in girls than in boys. It may occur in either sex between the ages of 5 and 15; after the age of 15 it is confined almost exclusively to girls.

We have not progressed in our knowledge of the etiology. We still discuss the neuropathic temperament and rheumatic diathesis. The idea is rather widely accepted that rheumatism, cardiopathy and chorea are different manifestations of one and the same disease. It is true that the percentage of cases of rheumatic arthritis is small in chorea. But, other manifestations of the rheumatic diathesis, such as recurrent tonsillitis, peliosis, nodules, muscular tenderness and so-called "growing pains" are so common in chorea that the theory of a rheumatic origin in chorea has considerable foundation in fact. An attack of chorea is apparently often precipitated by emotional and physical shock, by fright or other emotional disturbances, overpressure at school, by trauma associated with emotional disturbance.

The results of emotional and physical shock are, nervous prostration, lowered vitality, enfeebled circulation, disordered metabolism and defective elimination. The ill effects of chill or exposure to wet and cold are identical to those of shock. This does not rule out the influence of a rheumatic infection as an etiologic factor, as only those predisposed to chorea develop the affection after emotional and physical shock. The average duration of an attack of chorea is said to be ten weeks. It may be much longer unless proper treatment is administered.

TYPES OF CHOREA

There are recognized two main groups of rheumatic or Sydenham's chorea: (1) The sthenic or explosive type in which spontaneity, violence, persistence and wide range of movement are the characteristic symptoms. (2) The asthenic or parietic type. The movements are less in evidence and there is a loss of muscular power. The choreic movements are not due to spasm of individual muscles but to complicated involuntary contractions of groups of muscles of unnecessary violence. The action of one group of muscles is continuously counteracted or replaced by its opponent group; attempted voluntary actions are accompanied and prevented by wild flourishes and jerky ataxia. These movements may be aptly described as quasipurposive. The facial contortions supply an admirable physiological study of the expression of the emotions; i. e., the expressions of gladness, sorrow, pain, pleasure, disgust, fright, contentment, etc., follow each other in rapid succession. Mutism is not an unusual symptom in asthenic chorea. Temperature is suggestive of arthritis, endo-

carditis, or sepsis, or there may be a rise of temperature in the acute mania of chorea. Endocarditis and myocarditis are referable to rheumatism and fatalities in chorea are attributable to cardiac affections. Psychic disturbances are common occurrences; there may be mental dullness and apathy, or fretfulness and tears; there may be night terrors with visual hallucinations; actual mania rarely occurs.

TREATMENT

The treatment of chorea is divided into two main parts, management and medication. Most chorea patients do better in bed, in an atmosphere free from all influences which tend to stimulate the emotions. In the sthenic cases, the bed should be made on the floor or in a padded crib; bony prominences should be protected by packing with cotton wool. In feeding the patients, china or glassware should not be used; feeding cups of metal should be employed. If there be much difficulty in swallowing the patient should be fed by nasal tube. Elimination should be stimulated. The medical treatment consists of sedatives to quiet restlessness and hypnotics to aid sleep. Chloral, luminal and bromides may be used.

For the cure of chorea, I consider but one remedy worth while and that is acetylsalicylic acid. It has been my experience, after using this remedy for many years that it is as specific in the treatment of chorea as quinine is in tertian malaria. I have seen all movements cease in the most severe cases within a week or ten days. I have never seen a mild case of chorea become severe if this treatment is instituted during the mild stage. Many cases of mild chorea need not go to bed or even stop school work; but perhaps it is the safest procedure to keep the patient quiet.

I have seen many patients with sthenic chorea under arsenic treatment for weeks and even months with no benefit symptomatically get well after a week or ten days of acetylsalicylic acid treatment. It may be given in five grain doses every two to three hours up to thirty and sixty grains daily. It is well to give an equal amount of sodium bicarbonate with each dose of the acid.

In the treatment of chorea by this remedy it is necessary to give enough, in order to get good results. Children can take quite large doses of acetylsalicylic acid with safety. Dr. D. B. Lees, in the harveian lecture of 1903, said he was in the habit of giving as much as 100 to 300 grs. of sodium salicylate daily to children from six to ten years of age, rarely with any evidence of intoxication. If symptoms of intoxication appear the dosage should be de-

creased. This is a good rule to follow in giving acetylsalicylic acid as well, i. e., the acid should be continued for at least a week after the choreic symptoms have disappeared, given in gradually decreasing doses. After discontinuance, it is well to give the child some tonic medication. Syrup of iodide of iron is an excellent tonic for children.

1432 Professional Building.

IMPROVED HOSPITAL SERVICE AND THE PUBLIC

JOSEPH D. JAMES, M.D.

SPRINGFIELD, MO.

If we place any credence in legend, hospitals originated as early as four thousand years B.C., and were perhaps limited to the necessities of the sick wayfarer. The medieval hospitals were no doubt crude and the unfortunate who of necessity was confined to the ward, stood forty or more chances out of one hundred to die or develop severe complications. As late as 1780 patients in the hospital were piled from two to five in a bed. The ward in some of the larger European hospitals contained from three to five hundred patients piled on beds of straw on the floor. The attending physicians carried sponges saturated with vinegar to mask the terrible odors arising from the patients. It has been said that an assignment to these hospitals meant almost as much as a death sentence. Not until the time of Lister, Pasteur and Semmelweis does the dark cloud of medieval medical practice begin to lift and the beams of light of modern medicine and hospitalization appear on the horizon.

The evolution of medicine has been slow and painful but steadily upward and perhaps up to a few years ago was ahead of hospital advance; but with the advance of medicine, surgery and diagnostic methods, it became necessary to look to the hospitals to supply the proper surroundings for the physician and the patient so that the advance in scientific and conscientious medical practice could be made available to them. In order that these requirements be met, a method of standardization of the hospitals has been inaugurated to insure the patient proper medical attention, which most certainly cannot be obtained elsewhere.

The success of standardization depends primarily upon four factors: first, the physicians on the staff; second, the higher quality of hospital service rendered; third, the duty of the

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patient to the hospital, and fourth, the ability to inform the public of the superiority of such service. It is with the last factor that we are concerned in this article. The superiority of such service depends on many factors and the interlocking of responsibilities between staff and hospital management; and last but not least, upon the satisfied and happy patient.

It stands to reason that the hospital which takes the most sincere personal interest in its patients is going to be the most successful. The proper reception in receiving the patient is one of the most important factors in establishing the reputation of the hospital, as first impressions are lasting. If a kindly greeting is given a patient, it oftentimes goes farther in making him feel at home than all the kindness that might be bestowed after having been met in a gruff manner by one unfitted for this important duty. The telephone service is also of the utmost importance in the hospital. A kindly voice soothes many woes and a kind answer turneth away wrath.

Among the requirements for the satisfied patient are cheerful surroundings with proper food, well prepared, ample in amount and served in an appetizing manner. A trained dietitian is a valuable aid in the food problem and in teaching and should be a part of every hospital. The beds should be of the most comfortable type, and I wish it were possible for the patients to have the pleasure of sleeping or resting in these beds somewhat later than is now the custom, instead of being awakened at five-thirty in the morning for temperature taking, early face washing and other things which fall to the lot of the usually overworked night nurse.

The nurses should be trained to be cheerful and eager to serve promptly the many necessary needs and at times unwarranted desires of the patient. The careful handling of patients seriously ill or those where movement causes pain should be stressed. Anticipating the patient's wants and desires is a mark of superior service and is of equal if not greater value than the preparation of accurate, neat records for the permanent file. The nurses should be taught that the patient is always self-centered, overanxious and more easily irritated and upset than when he is well. One careless, lazy, inefficient nurse can do an unlimited amount of harm to a hospital organization. She should be eliminated for the good of the hospital and herself. Overworked or ill nurses should not be on duty under any circumstances.

Daily visits by someone who is in authority in the hospital is of value to reassure the sick individual that he or she is kept constantly in

mind; that the aim of the hospital and the physician in charge is speedy recovery and that the most comfortable surroundings possible are being provided.

Visitors, especially members of the family, should not be too rigidly excluded. No company is as harmful perhaps as too much; but the proper kind and amount is of inestimable value to the convalescent. A single visitor of a certain type may do a great deal of harm, especially the fault-finding type, or the one who spreads "graveyard narratives." I have seen even nurses of the latter type; they should be dismissed and not reemployed. The former type will always be with us and just what to do with them is a problem that requires tact, and at times, stern measures.

A certain type of patient known as the "chronic kicker" is occasionally encountered. Many times a barrage of good, kind, cheerful treatment will win this type over. Other times every effort to please will fail; in these cases a mantle of charity should be placed about the patient and good conscientious service rendered, hoping for speedy recovery. After he is well he may still be an asset of good will for the hospital though painfully earned. All of you have experienced the pleasure of serving patients whose gratitude was so pure that you felt almost like making no charge for professional service and without being selfish regretted their departure as patients.

In cases of serious illness, when it is necessary or desired by the family for some one to stay through the night, a cot or bed for the anxious one should be provided. Also, at midnight a cup of coffee and a sandwich or toast will be as bread cast upon the waters and it will return manyfold.

The assurance to the patient that she is receiving good medical care will fortify the position of the physician in charge. Likewise, the physicians may help the hospitals by words of confidence in the nursing care of the patient.

Post-hospital interest in the patient by inquiry over the telephone, by letter or visits, is practical and of value to the hospital.

However, the hospital may do its entire duty to the patient but if the staff is not mindful of its duty it will fail as a hospital in the full sense of the word. Members of the staff of standardized hospitals are supposed to be physicians well versed in the progress of medicine. They are also supposed to be free from avarice and unethical commercialism but possessed of good morals, and energetic enthusiasm in the exercise of the duties of the profession. A proper examination of all patients should be made at the earliest possible moment and the record

with the physician's diagnosis must be supplied promptly to the hospital.

As far as possible, inform the patient or some member of the family as to the condition present, and in terms he will understand. Make the proper number of visits, and in seriously ill patients two or more visits daily are to be encouraged. A little extra effort on the part of the doctor pays well in the end. Make personal inquiry of the patient as to his wants or desires and see that they are supplied, if not harmful. Free consultation between staff members will give an atmosphere of sincere interest in the patient. I would suggest that these consultations, if called by the physicians, be without charge and the consultant's opinion be passed to the patient and put on the progress record. The consultant's record is of extreme importance.

When the patient is dismissed, convalescent instructions and advice as to follow-up calls should be given. The duties of the hospital to the staff, beyond making the patient comfortable and happy are many, some of which are: to report at once the arrival of new patients and their immediate condition; to report any changes in their condition that might warrant change of orders; to provide adequate nursing records and efficient nursing care, and to provide adequate sterilization, proper laboratory and roentgen ray facilities.

Friendly discourse with the various members of the staff will help to allay any fears of favoritism and keep out the enemy, jealousy, which causes much discord. A hint or an idea gained from the weakest member of the staff may be of greatest value to the success of the hospital. On the other hand, even though the ideas or suggestions are puerile, the "Doc" has been flattered by the discourse and will feel better. You know we all like flattery.

The hospital management should make it clear that any doctor who is qualified and ethical will be admitted and welcome to practice in the hospital, if he will follow the rules and regulations of the hospital. A man cannot be ethical at one hospital and follow shady practices at another and be considered up to ethical standards.

It is also necessary to consider the duty of the patient to the hospital. The duty of the hospital to the patient is a subject which is often and quite extensively discussed, while the other side of the question, the duty of the patient to the hospital, very seldom is given much thought or consideration. That there is such a duty most broadminded people are willing to admit, especially when viewing it from a business standpoint; but there is another duty of

the patient which might be first in importance, in securing the efficiency of the hospital and rendering it possible for the institution to give the best possible hospital service to its patrons.

The hospital is obliged to assume responsibility for many in its employ, and as long as we are human mistakes will be made. If in the care of a patient a mistake is made or something is lacking in the service that a patient has a right to expect, such as failure of the nurse to answer the lights promptly, or the nurse's attitude toward the patient not being what it should, or food served that is not palatable, etc., endless harm is sometimes done a hospital by such things not being told to the proper authorities. Instead, the hospital is criticised on the outside and prejudiced listeners are given a very bad impression of the organization.

If constructive criticism is made to the superintendent of the hospital when mistakes happen, they can be corrected and oftentimes a department made more efficient for the institution. Perhaps a daily inquiry by someone in authority would correct many errors on the spot.

It is true that a hospital in order to carry on its work in an efficient and scientific manner, must rely on its patrons to keep it on a good financial basis; this of course can only be done by the patients meeting their bills with promptness. If they can be made to realize that the current expenses of the hospital are very great and pay in advance for their rooms, understanding that a refund would be made in cases where one is dismissed before the week is up, the hospital would be put in much better shape to serve the public. Many times a word or two on this subject from the doctor before a patient is sent to the hospital, will be of great assistance and prevent some from taking a higher priced room than they can afford; this will also help keep the hospital from carrying a large number of accounts that may never be balanced.

Private nurses in many instances are indispensable for the proper care of patients. Some patients keep them longer than necessary as a luxury or from fear of inadequate floor service. Many times the financial burden for the patient is materially and unnecessarily increased. The physician in charge should see that the expenses are curtailed as soon as it is safe, and the hospital should maintain an adequate floor service to care for the patient properly after the special nurse is dismissed.

The duties of the hospital to the patient and of the patient to the hospital then are correlative; each performed well gives assurance of service and efficiency.

The local press can and should be used in many ethical ways to inform the public of the

activities of the hospital and its work, especially the number of charity patients and how the funds are procured to carry on such service. A social service if properly conducted is of value to the community and is a means of ethical advertising.

This paper is not finished without discussing the duty of the staff to the hospital, and this duty we shall consider for a moment.

It goes without saying that a man who remains on the staff of a standardized hospital must first be a gentleman; if he is such he will have no trouble.

To conform to standardization, he must obey all the rules and regulations of the hospital, which includes prompt answering of calls in emergencies, giving concise, simple written orders to the nurses in charge and giving all possible courtesy and instruction to the student nurses. He is to report to the proper authority any failure or misconduct of nurses and not under any circumstances censure the student or private nurse in the presence of the patient; and especially not criticize the hospital or nurses for some dereliction to the public. Try rather by gentle means to prevent the recurrence of the error, if any has occurred. The practice of economy in dressings, sutures, etc., will help the hospital provide greater comforts for their patients.

The smooth working of an operating room depends a great deal upon all members of the operative team being on schedule. There is nothing more disconcerting than to have the schedule thrown out of gear by some procrastinating surgeon, to say nothing of the suspended anxiety of the patient and family.

Offering suggestions for betterment of the hospital should be made through the proper committees rather than direct to the hospital authorities. The greatest possible number of autopsies should be secured and members of the staff should be invited to attend postmortem examinations; a better understanding between physician and undertaker would perhaps increase the number of autopsies.

It is the duty of the staff to provide doctors for the necessary lecture staff for student nurses. If these lectures could be made to cover the practical and necessary information for proper care of the sick and injured it would be better than the present day tendency of giving lectures more suited to young medical students. Such lectures in most instances are studied only to pass a state board examination and then usually are forgotten because there is little or no correlation between the practical side of nursing and the technical information that is required of nurses to pass these ex-

aminations. A good substitute for a part of the technical teaching would be a course in modern literature, and would be more valuable to the average patient and nurse than knowledge of the origin and insertion of the trapezius muscle.

Members of the staff should be absolutely free from any political ambitions or intrigues as far as the advancement of staff positions for themselves and others is concerned. Anyone who injects petty politics into a staff is playing with fire and forgets that good work only stands the real test in conscientious ethical medicine.

The cooperation of the hospital staff should be used in educating the patient on the value of standardization, using every ethical means to impart this information. The hospital and staff must keep ever in mind that once standardized does not mean always standardized, as the renewal of standardization is based on yearly inspection the same as yearly reappointments of the staff.

It is only through staff conferences that a thorough review of the work done in the hospital may be visualized. These discussions should be frank and without malice; in other words, a friendly exchange of ideas. These conferences probably could be made more interesting and complete if each staff member had some advance notice of what was likely to be considered; also, if possible, in reports of cases to show radiograms and provide for the projection of microscopic slides to be discussed by the pathologist.

Attendance of the regular or active staff at regular meetings is obligatory. A ruling to this effect must be strictly observed. Any member not sufficiently interested in conferences and meetings to attend regularly should not have a place on the staff of an approved hospital, or any hospital for that matter. Except in case of illness of self or family, absence from community or the occasional emergency, there should be no excuse for absence from meetings.

The regular staff meetings if properly conducted are really the corner stone of standardization; only by regular attendance and free participation in the discussions can enthusiasm and interest be kept up; if these are allowed to lag, death of the undertaking by the blight of stagnation is inevitable.

An alert, conscientious, ethical medical staff and a hospital organization which from superintendent down, is determined to give complete and sympathetic service, will in the end be recognized more and more as a place of refuge in case of serious illness or injury.

POSTMORTEM ANALYSIS

ETIOLOGY OF PERITONITIS IN SEVEN HUNDRED
FORTY-ONE CASES

C. C. PFLAUM, M.D.

COLUMBIA, MO.

The etiologic factors in the development of peritonitis are well known and may be found discussed in the textbooks on pathology and surgery, but these sources fail to give the relative frequency with which these etiologic factors operate. It seemed worth while, therefore, to study a series of postmortem examinations of sufficiently large number with the intent of determining the frequency of general peritonitis, the relative importance of the various causative factors and variations incident to age and sex.

It was realized that the results and conclusions of such a study might be at variance with those of similar studies elsewhere because of different clinical conditions, or different interpretations of the autopsy findings. Naturally, studies based entirely on clinical observations may give results quite different from the results obtained in studies based solely on post-mortem material.

This report is based on the study of 10,628 autopsies performed by members of the department of pathology at the University of Minnesota extending over the ten-year period, 1920-1929. The autopsy material was obtained from the various hospitals, the coroner's service and non-hospitalized patients of the City of Minneapolis, from Ancker, Miller and St. Luke's hospitals of St. Paul, and Glen Lake Sanatorium at Oak Terrace. These cases represent a wide range of general and specialty hospital material and patients of several hundred practicing physicians. The autopsies were performed by some 20 pathologists. This multiplicity of practitioners and pathologists should make possible a more comprehensive survey than would be the case were the material all from one hospital and one staff group.

There were 741 cases of peritonitis in this ten-year period. This is equivalent to 6.9 per cent of the total autopsies for the decade. There were, however, 948 autopsies on stillborn infants which are not here taken up and when deducted from the total the incidence of peritonitis rises to 7.6 per cent. These figures are in close agreement with those of Brines,¹ who found 94 cases, or 6 per cent, of general peritonitis in an analysis of 1535 autopsies.

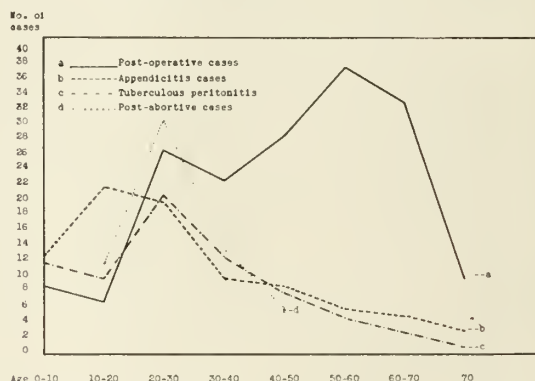
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From Department of Pathology, University of Missouri School of Medicine, Columbia, Mo.

1. Brines, O. A.: An Analysis of 1,535 Autopsies, *Am. J. Clin. Path.* 2:37, 1932.

Influence of Sex and Age.—There were 394 cases, or 53 per cent, in males and 347 cases, or 47 per cent, in females. In the general autopsy series the ratio of males to females was practically two to one. With this correction, the cases of peritonitis in women were relatively about twice as frequent as in males. This is to be expected because the female is subject to practically all the factors operating in the male plus those connected with the reproductive tract.

The age incidence is graphically shown in graph 1. The peak for both sexes occurs in the age group of 20-30 years, which is that for most cases of acute appendicitis, tuberculous and postabortive peritonitis. The curve for females corresponds closely with the general



Graph 1. Showing number of cases and sex relationship according to age groups.

curve because the incidence of gynecologic and obstetric cases reaches its maximum also in this age period. The male group has its peak at a later age; namely, 40-70 years. The cases of peritonitis causing this peak are those following perforated gastric and duodenal ulcers and carcinomas, all of which occurred predominately in the male sex and at an average age of 50 years.

Bacteriology.—Bacteriologic studies (table 1) were made on the peritoneal exudate of 97 individuals, or 13 per cent. This is a low percentage of such examinations, but many of the bodies had been embalmed, others had been dead for such a period prior to autopsy that postmortem secondary invasion was certain, and still others were examined under circumstances that made such studies difficult or impossible. In 78 per cent of the cases so studied a streptococcus was found.

CLASSIFICATION AND GROUP STUDIES

While the grouping of some cases, such as typhoid perforations, was obvious and easy others were difficult. This was especially true in the postoperative deaths where much depended on the clinical history, but that history

Table 1. BACTERIOLOGIC FINDINGS ON 97 CASES SO STUDIED

Etiology of peritonitis	Strep	Staph	B. Coli	B. Typhosus	Pneumo- coccus	Gram+ Diplococcus	Spore Aerobe
Postoperative	17	1	0	0	0	0	0
Primary	13	2	0	0	0	0	0
Postabortion	7	1	0	0	0	0	0
Erysipelas	4	0	0	0	0	0	0
Perforation of colon	4	0	0	0	0	0	0
Puerperal	4	0	0	0	0	0	0
Otitis media	4	0	0	0	0	0	0
Perforation of appendix	4	0	3	0	0	0	1
Pelvic abscess	4	0	0	0	0	0	0
Sepsis	3	1	1	0	0	0	0
Nonperforated carcinoma	2	0	0	0	0	0	0
Ulcerative colitis	2	0	0	0	0	0	0
Salpingitis	2	0	0	0	0	0	0
Renal lesions	2	0	0	0	0	0	0
Septic throat	1	0	0	0	0	0	0
Carcinoma of pancreas	1	0	0	0	0	0	0
Umbilical infection	1	2	1	0	0	0	0
Typhoid perforation	0	1	1	2	0	0	0
Pleurisy	0	1	0	0	0	0	0
Perforation of duodenal ulcer	0	0	1	0	0	0	0
Carcinoma of bladder	0	0	0	0	1	0	0
Lobar pneumonia	0	0	0	0	1	0	0
Perforation of tuberculous ulcer	0	0	0	0	0	1	0
Total	75	9	7	2	2	1	1

was often meager or nonexistent. After considering all phases, the classification as adopted is given in table 2. No doubt another investigator studying this material might arrive at quite a different classification and conclusions.

Postoperative Peritonitis.—The largest group, that of 176 cases, or 23.6 per cent of the total, followed abdominal or pelvic surgical procedures. Of these, 56 per cent were males and 44 per cent females. Cases of preoperative perforated viscus, such as ruptured peptic ulcer, traumatic perforation of intestine, etc., and those with gangrene, as of the appendix, were not included in this group.

Peritonitis developed in 34 patients after operations on the stomach. This high incidence following gastric operation is partly due to the technical difficulties, especially that of securing water-tight suture lines. In many of these cases leakage was demonstrated at autopsy.

Gynecologic operations and those on the large intestine were each followed by peritonitis in 25 instances. The procedures on the genital organs included 17 operations on the uterus, 4 on the tubes, 2 on the ovaries, and one each on the broad ligament and perineum. Four cases were directly associated with pregnancy. The majority of the operations on the colon were

Table 2. ETIOLOGIC CLASSIFICATION OF 741 FATAL CASES OF PERITONITIS

Causative factor	Males	Females	Total	Per cent of all cases	Average Age
Postoperative	99	77	176	23.7	44.5
Acute appendicitis	61	27	88	11.8	28
Tuberculosis	39	32	71	9.6	29
Postabortion	0	59	59	8.0	27
Malignant tumors	30	15	45	6.0	52
Perforation of peptic ulcer	28	7	35	4.7	50
Undetermined	15	18	33	4.4	25
Posttraumatic	26	5	31	4.2	36.5
Pelvic abscess	0	16	16	2.1	32
Postpartum	0	15	15	2.0	28
Miscellaneous intestinal lesions	5	10	15	2.0	26.5
Septicemia or pyemia	7	6	13	1.8	26
Ulcerative colitis	6	7	13	1.8	38
Otitis media	7	5	12	1.6	4.6
Pneumonia and pleurisy	7	4	11	1.4	32
Hernia	6	4	10	1.35	58
Umbilical infection	7	3	10	1.35	2 mo.
Salpingitis	0	9	9	1.2	35
Perforated typhoid ulcer	7	2	9	1.2	31
Lesions of liver and gallbladder	6	2	8	1.1	44
Acute cystitis	7	1	8	1.1	52
Erysipelas	1	6	7	0.94	1.5
Perforation of intestinal diverticulum	5	2	7	0.94	47
Mesenteric thrombosis	5	1	6	0.8	65
Perforation of tuberculous enteritis	3	3	6	0.8	41
Intestinal perforation (undeter.)	4	2	6	0.8	51
Renal lesions	3	3	6	0.8	41
Septic throat	2	3	5	0.67	10
Acute pancreatitis	2	2	4	0.54	28
Prostatic abscess	2	0	2	0.27	55
Phlegmonous gastritis	2	0	2	0.27	50
Retroperitoneal suppuration	1	1	2	0.27	34
Perivesical abscess	1	0	1	0.13	45
Total	394	347	741		

Table 3. TYPE OF SURGICAL PROCEDURE IN 176 CASES OF POSTOPERATIVE PERITONITIS

Type of surgical procedure	Male	Female	Total
Gastric	27	7	34
Gynecologic	0	25	25
Colon and rectum	19	6	25
Gallbladder	11	11	22
Appendectomy	13	6	19
Small intestine	7	10	17
Genito-urinary	9	3	12
Exploratory laparotomy	3	4	7
Paracentesis	5	2	7
Herniotomy	1	3	4
Pancreatic	3	0	3
Splenectomy	1	0	1
Total cases	99	77	176

for the relief or palliation of carcinoma. The condition was found to follow 22 operations on the gallbladder, of which 17 were cholecystectomies for cholecystitis and cholelithiasis, and 5 were cholecystostomies for the relief of obstructive jaundice caused by malignant tumors.

In the cases of acute appendicitis where operation was followed by peritonitis this lesion has been listed in the group under appendicitis and not in the postoperative group. However, 19 patients on whom an interval appendectomy was performed and peritonitis resulted are listed as postoperative in type.

Following a variety of genito-urinary operations, such as prostatectomies, nephrectomies and removal of ureteral calculi, there were 12 cases of peritonitis. Seven cases followed exploratory operations, 4 of which revealed cirrhosis of the liver and 3 carcinoma of the stomach. Paracentesis, too frequently regarded as a minor procedure was responsible for 7

deaths from peritonitis. In one instance it was demonstrated that the trocar had perforated an intestinal loop. The condition followed herniotomy in 4 instances, pancreatic operations 3 times and once after splenectomy.

The age groups of the postoperative cases in graph 2 show two peaks in the curve. The first is due mainly to the appendiceal and gynecologic cases, while the second and higher curve is due principally to operations for the eradication or palliation of carcinoma.

Appendicitis.—Peritonitis developed in 88 cases of acute inflammation or gangrene of the appendix. Of these 61, or 70 per cent, were males and 20 did not receive surgical treatment. The age incidence is shown in chart 2 with the extremes being 3 and 78 years.

Peritonitis Incident to Tuberculosis.—It is surprising that tuberculosis should be third in frequency of factors causing peritonitis. This is due partly to the fact that the material on which this study is based includes the patients of two large tuberculous services, and partly because necropsies are more likely to be sought in cases of this nature. There were 71 cases of peritoneal tuberculosis (9.6 per cent of the cases under study, or 0.66 per cent of this entire autopsy series), and 6 additional ones in which perforation of tuberculous intestinal ulcers incited a general purulent peritonitis. In 25 patients the peritoneal lesions were part of a generalized miliary tuberculosis. Intra-abdominal tuberculosis preceded the tuberculous peritonitis in 53 instances; namely, tuberculous enteritis, colitis, or both, in 30 patients, salpingitis in 12, caseous mesenteric lymphadenitis in 4, prostatitis and seminal vesiculitis in 3, adenitis in 2 and nephritis in 2.

Postabortion.—The dangers of interruption of pregnancy cannot be overemphasized. There were 59 cases of fatal peritonitis following induced abortions. This is equivalent to 17 per cent of the female cases. The histories indicated that the abortions were self-induced or done by some nonmedical individual in the majority of cases. The following genital lesions were found to follow abortion and precede peritonitis: acute suppurative or gangrenous endometritis, 40 instances; acute suppurative salpingitis, 6; tubo-ovarian abscess, 6, and one case each of pelvic abscess, uterine perforation and uterine rupture.

Postpartum.—Peritonitis followed parturition in 12 cases of full term pregnancy. The fatal outcome resulted in from a week to 10 days after delivery in most cases, but it was delayed for a month in one instance and for 6 weeks in another. Instrumental delivery was employed in 2 of the cases and one had a breech delivery. The associated pathologic findings



Graph 2. Age incidence in (a) 176 cases of postoperative peritonitis; (b) 88 cases of peritonitis associated with appendicitis; (c) 71 cases of tuberculous peritonitis, and (d) 59 cases of postabortion peritonitis.

were, acute or gangrenous endometritis in 7 cases and acute suppurative salpingitis in 3. The average age of this group was 26.5 years.

There were 2 instances of uterine rupture during labor at full term. One occurred in a 21-year-old patient in whom a Pott's disease made delivery impossible and the rupture occurred during craniotomy. The other was in a 45-year-old primipara.

There was one case of peritonitis associated with an abdominal pregnancy which had progressed to about full term when maceration of the fetus and general peritonitis occurred.

Lesions of Tubes and Ovaries.—Pelvic sup-puration resulted in 16 cases of peritonitis in a group having an average age of 32 years. The original suppurative process was tubo-ovarian in 10 cases, ovarian in 2 and throughout the pelvis in 4. Peritonitis occurred as a sequel to 9 cases of salpingitis. The tubes were acutely inflamed in 6 cases, gangrenous in 1 and the seat of chronic inflammation in the other 2. The ages ranged from 6 to 74 years.

Idiopathic or Primary Peritonitis.—From the clinical history and autopsy findings no assignable cause for the general peritonitis could be determined in 33 instances. Because of the absence of positive causes, this group is considered as primary peritonitis. One third of the patients were under 1 year of age; the remainder were rather evenly distributed in age from 1 to 70. There were 15 male subjects and 18 females. A general peritonitis of undetermined origin was already present in 6 of the patients upon whom operations were performed.

Trauma.—Of the entire group of peritonitis cases 31, or 4.2 per cent, followed trauma; 26 were in the male sex with one third of them between the ages of 30 and 40. Following automobile accidents there were 16 cases, gunshot wounds 13 and 2 after stab wounds.

Malignancies.—The most frequent cause of peritonitis in patients past 50 was perforation of a viscus by a malignant neoplasm. There were 30 such cases in this series, 23 being in men. The tumors encountered were 28 carcinomas, 1 sarcoma and 1 hypernephroma, located as follows: carcinoma of stomach 12, sarcoma 1; carcinoma of colon 9; hypernephroma 1; carcinoma of the rectum 4; carcinoma of gall-bladder, duodenum and urinary bladder 1 each.

In 15 additional cases malignancies extended to the peritoneum and incited a peritonitis without demonstrable gross perforation. These were: carcinoma of stomach 6 (one with necrosing omental metastasis), carcinoma of uterus 4, and 1 each of carcinoma of bladder, carcinoma of prostate, generalized carcinomatosis of peritoneum, gland cell type (primary not found), and multiple melanomata of small intestine.

Peptic Ulcer.—Peritonitis developed in 35 cases following perforation of a peptic ulcer. The ulcer was located in the duodenum in 21 cases, 20 of them males. Ages ranged from 12 to 77 years, with an average of 49. The youngest patient also had a sarcoma of the cecum. Of 14 cases of perforated gastric ulcer 8 were males and 6 females. The ages ranged from 18 to 76 years, with an average of 51.

Pyemia and Septicemia.—A terminal peritonitis developed in 13 cases of pyemia or septicemia, 7 of them males and 6 females. The average age was 26 years, but there were 4 cases under 6 months of age. The primary focus was not found in 5 instances, though the findings were clinically and pathologically those of a septicemia. In the other 8 cases a definite focus of infection was found, as crushing injury of foot, cellulitis of leg, ulcerative vulvitis, hand injury, suppurative mastitis and ischio-rectal abscess. Subacute bacterial endocarditis was present in one of these cases.

Typhoid.—During the course of typhoid fever 7 males and 2 females developed peritonitis. Perforation was demonstrated in 7 of these; in the lower ileum in 5 instances and one each at the ileocecal valve and in the cecum. The age varied from 5 to 53 with an average of 40.

General Lesions of the Digestive Organs.—Peritonitis complicating phlegmonous gastritis occurred in 2 male subjects of 50 years of age. An ulcerated carcinoma of the stomach occurred in one case.

Generalized peritonitis associated with ulcerative colitis occurred in 6 males and 7 females. In only 7 of these could a gross intestinal perforation be demonstrated. The average age of this group was 38 years, with extremes of 2 months to 80 years, 6 being in the 20 to 30 year group.

In a group of 6 cases autopsy search revealed intestinal perforations the etiology not determined. The lesions were definitely not typhoid or tuberculous. The perforation was situated in the cecum in 4 instances and in the lower ileum in the others. The ages ranged from 15 to 76 years. Gangrenous or perforating intestinal diverticulæ gave rise to 7 cases, 5 of them in males; the ages ranged from 8 to 71. Four cases had perforation of a sigmoid diverticulum, 3 inflammation and perforation of a Meckel's diverticulum.

Mesenteric thrombosis was responsible for 6 cases of peritonitis, only one being in a female. Gangrene of the ileum was found in 5 instances and of the ileum and colon in 2. The average age of 65 years suggests that advanced arteriosclerosis was the basic factor.

Peritonitis resulted from intestinal lesions in 15 other cases; namely, (a) 4 instances of recto-

vaginal fistulae, 2 complicating ulcerative carcinoma of the uterus; (b) 3 cases of intussusception in males, 2 of them in infants under 6 months; (c) 3 cases of intestinal obstruction, 2 due to adhesions of previous operations, and one in a 4-day-old infant due to a mesenteric anomaly; (d) 2 cases of volvulus; (e) 2 of congenital atresia of the intestine, and (f) 1 case of acute ulcerative duodenitis.

Incarcerated hernia with gangrene of intestine caused 10 cases of peritonitis. The patients, 6 males and 4 females, had an average age of 57.9 years. Operative relief was attempted in only 3 cases, and in each there was already an early peritonitis present. The type of hernia was femoral and inguinal each 4, and intra-abdominal 2.

Lesions of the liver or gallbladder terminated in general peritonitis in 8 patients whose average age was 44 years. The autopsy revealed 3 cases of acute cholecystitis, 2 with perforation, 4 instances of liver abscesses, one amebic in type, and one case of portal cirrhosis associated with splenomegaly.

As the result of acute suppurative pancreatitis, 4 patients died of peritonitis. Their ages were 13 days, 5, 36 and 70 years. The oldest, a man, had carcinoma of the pancreas that caused an obstructive biliary cirrhosis. In the other cases no causative factor for the pancreatitis was demonstrated.

Urinary Organs.—Peritonitis terminated the course of 6 cases having renal lesions. The lesions were: lipoid nephrosis in 2, pyelonephritis in 2 and chronic glomerulonephritis and perinephritic abscess 1 each.

Acute cystitis followed by general peritonitis was the cause of death in 9 patients having an average age of 52 years, 6 of them males. In 3 there was an acute diverticulitis which had progressed to gangrene and perforation. In 3 cases without diverticulae, there was a perforation of the wall by a gangrenous process. Two cases were associated with spinal cord lesions; namely, tabes dorsalis and a posterior lateral sclerosis of pernicious anemia.

Lesions of Contiguous Tissues.—A primary intrathoracic disease was terminated in 11 cases by an acute general peritonitis, 7 males and 4 females, with ages ranging from 1 to 58 years. There were 5 instances of empyema and 6 of pneumonia.

An interesting group of 10 cases resulted from umbilical infections. There were 7 males and 3 females with ages ranging from 3 days to 19 months (9 were under 3 weeks of age). One instance followed accidental detachment of the cord.

As a sequel to a suppurative focus adjacent to the peritoneum, there developed peritonitis

from 2 cases of prostatic abscess, one of perivesical abscess in a man with a spinal cord tumor, and one case each of psoas abscess and retroperitoneal cellulitis.

General Conditions.—While the cases here grouped might have been placed with those under the heading pyemia and septicemia, they have been reserved for special consideration for the sake of emphasis, and also because they are chiefly of concern in a special age group—that of early childhood.

Following an acute pharyngitis diagnosed clinically as septic sore throat, there developed 5 cases of fatal peritonitis. Of these, 3 were children under 2 years of age, 2 males and 3 females. At autopsy a widespread peritonitis was found in each, and no intra-abdominal source of infection could be demonstrated.

Generalized peritonitis complicated the course of 12 cases of middle ear and mastoid inflammation, 7 male and 5 female patients whose ages varied from 23 days to 22 years, with 8 being less than 1 year old. The histories indicated that the primary infections here were acute. In one instance there had been an intra-peritoneal medication, and it is possible that the peritonitis resulted from this procedure. In the others, no source for the infection other than the ear could be found.

Erysipelas was complicated by peritonitis in 7 instances, 6 in females and, with one exception, all were under one and one half years of age. The erysipelas lesion was of the face in 5 cases and of the vulva and legs once each.

SUMMARY AND CONCLUSIONS

1. There is here reported an autopsy study of 741 cases of peritonitis.
2. While no age group adapts itself to a single etiologic type of peritonitis, it was found possible to group the cases into 3 age periods where there were definite predominating factors:

(a) Infancy and early childhood, where peritonitis was secondary to otitis media, pharyngitis, erysipelas and umbilical infections.

(b) Adults of the third and fourth decade where the primary lesion was found especially in the appendix, female genital organs and incident to trauma or tuberculosis.

(c) Late adulthood, where the peritonitis was incident to perforated peptic ulcer, strangulated hernia, mesenteric thrombosis, malignant tumors and inflammations of the male genitourinary tract.

3. Peptic ulcers in the duodenum in males were found in 20 cases to 1 instance in a female, while in the stomach there were 8 male to 6 female cases.

4. On adjustment of proportionate sexes under study, peritonitis was found twice as frequently in females as in males.

5. Postabortion peritonitis was found in 59 cases, or 17 per cent, of the female patients.

6. Bacteriologic studies revealed streptococci as being the predominant organisms, they being found in 78 per cent of the cases so studied.

7. Tuberculosis was the cause of peritonitis in 71 cases, or 9.6 per cent.

My personal thanks and acknowledgment is hereby made to Dr. E. T. Bell, Director of the Department of Pathology, University of Minnesota, for permission to use this material.

University of Missouri School of Medicine.

THE PROBLEM OF THE NARCOLEPTIC

E. SANBORN SMITH, M.D.

KIRKSVILLE, MO.

The clinical entity now known as narcolepsy was first described as such by Gelineau in 1880.¹ There are two outstanding characteristics, viz., (a) an irregularly recurring desire to sleep without apparent cause, and (b) a sudden loss of muscular tonus during laughter and other emotional states with tendency to fall or collapse regardless of time, place or immediate occupation. This latter phenomenon has been denominated cataplexy.

The syndrome may occur as a result of tumor² pressure or of inflammation in structures adjacent to the third cerebral ventricle. When these can be ruled out we may consider the disease idiopathic.

This disease has been regarded as a medical curiosity for many years and several cases have been recorded in foreign literature. Doyle and Daniels³ studied sixty-seven cases traced after examination in the Mayo Clinic prior to September, 1930. In recent years interest in the disease has been recreated because of changing living conditions.

In former years, in what might be called the horse and buggy era, the narcoleptic was a menace only to himself because if he fell asleep while driving, the horse stayed awake and conveyed the driver safely on until his nap was finished; but in our present motorized era the victim of this disease becomes a factor of real danger to himself and to others. It is not unlikely that a small number of accidents occurring as a result of the driver of a motor car falling asleep may be due to narcolepsy and not to mere physical exhaustion.

No specific drug seems to have been evolved for the treatment of this disease, which manifests a true chronicity. However, following

the report of Janota⁴ and Skala⁵ to the Neurological Society of Prague and the entirely independent and unrelated report of Daniels and Doyle⁶ on the administration of ephedrine, there is accumulating a very respectable amount of data on the value of this drug in the symptomatic control of narcolepsy.

REPORT OF CASES

Case 1. A man, aged 24, who for five years had mowed lawn, tended shrubbery and fired a house furnace, was incapacitated for three months following encephalitis. He noticed increasing drowsiness and would fall asleep leaning on the handle of his lawn mower. He often nodded sleepily while driving the owner's horse but no ill effects were observed until he was put in charge of his employer's automobile and promptly drove the car into a ditch.

This man showed definite but temporary improvement under the administration of strychnia and pituitary extract but relapsed as soon as treatment was stopped.

Case 2. A graduate nurse, aged 20, had been giving general anesthetics in a hospital for two years when she contracted typhoid fever. After recovery from this disease she became increasingly somnolent and when roused was disposed to strike out at the one rousing her. When moved to laughter she would collapse in a heap on the floor unless sitting down. The basal metabolic rate was minus 10 and the patient regained her self control and seemed to be able to overcome the desire to sleep when thyroid extract was administered.

Case 3. A school girl, aged 16, had been drowsy and sleepy for about two years. She could not keep awake in school and was a source of anxiety to her family. Many times she narrowly escaped injury when falling asleep while driving a car. Members of the family had agreed not to relate humorous stories while the patient was standing nor while she was driving a car because she would let go the steering wheel and collapse.

There was never any twitching, tongue biting or frothing. She had bad nightmares and her mother was frequently aroused by her screams. At twelve years she was said to have had a goiter. There was a definite polyuria after each drowsy period. The basal metabolic rate was minus 12 per cent.

This patient has been under observation for one year and appears quite normal and free from symptoms when taking three fourths grain of ephedrine after breakfast and three eighths grain of ephedrine at 12:30 p. m. and at 5:30 p. m. Taking the last dose at a later hour seems to make her wakeful and nervous. The basal metabolic rate is minus 2 per cent and the urinary output in twenty-four hours is 1450 c.c.

111 East Patterson Avenue.

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FEBRUARY, 1933

EDITORIALS

THE KANSAS CITY SESSION

On another page* we publish the preliminary announcement for the scientific program of the Kansas City Session, May 1, 2, 3, 4. While the program is incomplete there are a sufficient number of contributions offered to indicate that the papers will offer a variety of topics which should be stimulating and instructive.

Members of the Kansas City Eye, Ear, Nose and Throat Society with the cooperation of the Ophthalmic Section of the St. Louis Medical Society are arranging a program on diseases of these organs that will certainly prove attractive to the specialist in these fields as well as to the general practitioner.

Another session will be devoted to tuberculosis, the program for which is being arranged by members especially interested in diseases of the chest. Several other symposia are scheduled but the topics and speakers are not ready for announcement at this time.

* See page 83.

BILLS IN THE GENERAL ASSEMBLY

There have been two bills introduced in the legislature that should interest the members of our Association. One is the administration bill, S. B. 11, which provides for the abolition of the state board of health and the creation in its place of a state department of health and the appointment of a commissioner of health. These would take the place of the state board of health and the secretary of the state board of health and health commissioner, as defined in the present statute, by transfer of the duties, rights and powers conferred upon the state board of health and the secretary of the board to the state department of health and the commissioner of health. It reduces the compensation of the commissioner of health to \$5000 per annum and expenses incurred in the per-

formance of his duties. Other bills abolish certain other boards and place their duties under the direction of the commissioner of health. These boards are the food and drug department, the state board of embalming, the board of barber examiners, the board of optometry and the board of nurse examiners.

H. B. 26 which was introduced by Mr. Redick O'Bryan, of Moberly, is objectionable to the profession. This bill provides that a license to practice medicine may not be revoked for criminal abortion until after conviction of the crime as in Section 3991. This section provides for the punishment for manslaughter. If this bill should pass it would be impossible to revoke the license of a physician for performing criminal abortion until the offender has been tried for manslaughter and convicted in the trial court, and until the Supreme Court had affirmed the judgment of the trial court if the defendant appealed.

These two bills, S. B. 11 and H. B. 26, are printed in full on another page in this issue of the Journal.* Members are invited to study these bills and take such action as the case seems to warrant.

The legislative committee is preparing a bill to be introduced at this session of the Legislature for the creation of liens in favor of physicians, surgeons and hospitals upon moneys due injured persons so that the fees for services rendered by physicians and hospitals will be paid. Such laws have been established in Delaware, Montana, Nebraska, New Jersey, Oregon and Virginia.

The necessity of such a law is plainly evident to all persons connected with hospitals and to physicians and surgeons who are called upon to treat persons injured in accidents or by accidental means. Under existing conditions the hospitals and the practitioners of medicine often fail to receive any payment for their services because the injured person passes out of the purview of the hospitals and physicians without discharging their obligations for services rendered and are not heard of again. It is reported that about 90 per cent of services to persons injured in accidents fail to pay the hospital or the physician and there is no legal procedure whereby these public servants can safeguard their interests in the money paid to the injured person by the insurer or by the person who is responsible for the accidental injury.

* See page 93.

COMMITTEE ON COSTS OF MEDICAL CARE

Early in December the Committee on the Costs of Medical Care made a report of its five

years' research and survey work in this field. It is needless to say that the report of the Committee caused comment or to give data on the contents of the report; *The Journal of the American Medical Association*, various other medical publications and the newspapers all gave much space to the report in most instances adversely criticising it.

Immediately following the issuance of the report of the Committee, majority and minority reports were adopted. The minority report which does not take up the work of the Committee in as much detail as does the majority report and is not as favorable to the report, has been adopted by several component societies of the Missouri State Medical Association as it has in several other states. Both majority and minority reports are published in this issue of THE JOURNAL* that those members who have not been actively interested in this work may acquaint themselves with the contents of the two reports.

* See page 88.

SUICIDES INCREASING

Medical science has accomplished a great deal during the last fifty years in promoting sanitary living, in preventing the ravages of contagious diseases and in reducing the hazards of surgical operations. The general death rate has been reduced through these measures to almost one half the rate of fifty years ago. However, the beneficial effects of these advances are being counteracted to a considerable extent by automobile accidents, homicides and suicides.

Statistics recently compiled by Dr. Frederick L. Hoffman, Wellesley Hills, Massachusetts, show that suicides are increasing and that they now constitute a significant factor in the death rate of this country. Dr. Hoffman's study included comparative data on suicides in 100 principal cities in the United States for each year since 1900. The rate per thousand in these cities in 1900 was 15.4 per 100,000 population. The rate increased from 1900 to 1908 then irregularly declined to the low point of 12.3 in 1920. During the last decade the rate has gradually advanced reaching an average death rate of 20.5 in the hundred cities. Fifteen cities had rates above 30 in 1931.

The suicide rate in American cities is higher than that found in most of the cities of foreign countries, although high rates obtained in the cities of Central Europe and in those countries where data are available the rate is gradually increasing.

While financial depression is doubtless responsible for many suicides it will scarcely account for all the increase because the rate was

gradually increasing in 1927, 1928 and even before the crash in 1929. Mental disease must account for at least a portion of these deaths thus pointing to the need of a field in medicine that is rapidly advancing and taking its place with other well-established specialties, viz., psychopathology.

WILLIAM ENGELBACH, M.D.

With the untimely death of Dr. William Engelbach, November 22, 1932, at the age of 55 years, an extraordinary medical career was ended. Much honor and fame were his during the last twenty-five years of his life.

Dr. Engelbach graduated from Illinois College, Jacksonville, Illinois, and later completed the study of medicine at Northwestern University Medical School in 1902. He served an internship in the Cook County Hospital, Chicago, and followed this with one and one half years of study in the University of Vienna.

On returning from his studies abroad he located in St. Louis and specialized in internal medicine. The St. Louis University School of Medicine was the beneficiary of his unusual talents as a teacher of medicine and elevated him to the chair of professor of clinical medicine, a position which he held from 1911 to 1924, and appointed him chief of the staff of St. John's Hospital. He was also a member of the staff of the St. Louis City Hospital, the Jewish and the Maternity hospitals.

In 1927 his Alma Mater, Illinois College, conferred upon him the honorary degree of Doctor of Science.

He was a member of the St. Louis Medical Society, the Missouri State Medical Association, the American Medical Association, the American College of Physicians, the Society for the Study of the Internal Secretions, the Southern Medical Association and several other medical organizations. He was a past president of the St. Louis Medical Society and the Society for the Study of the Internal Secretions.

Dr. Engelbach was endowed by nature with three prerequisites of success, viz., an excellent mind, an insatiable desire for knowledge and a willingness to work hard and long to accomplish his objective. He never ceased to be a student. That Dr. Engelbach possessed an alert, searching and analytical mind was recognized by all who knew him.

Early in his medical career he became interested in the ductless glands, at that time little being known of their function. His greatest recognition as one of the outstanding American clinicians probably rests upon his correlation of the signs and symptoms observed in and complained of by patients having pituitary, thyroid

or gonad disturbances. He was one of the first men to speak of pluriglandular syndromes; at that time to offer such a diagnosis was to subject one's self to criticism. In the light of our present-day knowledge pluriglandular imbalance is more often the rule than the exception. He saw great numbers of patients apparently normal physically, except that some might have been obese, in whom signs and symptoms occurred with such similarity that he propounded syndromes for their diagnosis which, at the present time, attest to his remarkable powers of observation as a clinician.

He established a clinic in St. Louis which attracted national and international attention. Patients came from all parts of the United States, Canada and Mexico. Eminent physicians from America and Europe visited his clinic to see and learn. It is said that his practice yielded him a very large income. This is true, but he did not practice medicine to accumulate wealth. A large financial return was the result of his ability and reputation as an excellent diagnostician. He was liberal with all. When his health failed in 1928 his financial resources were small.

He long had the ambition to put into permanent form the knowledge of endocrinology which he had accumulated by observation of thousands of patients over a long period of years. At this time Mr. George O. Knapp, Mr. E. Palmer Gavit and Mrs. Charles H. Jackson, Jr., of Santa Barbara; Mr. L. H. Wentz, of Oklahoma, and Mr. Max Flieschman, Cincinnati, created a fund of \$100,000 to enable Dr. Engelbach to write and have published in book form the valuable information which he had gained. In 1932 there came from the press of Charles C. Thomas, Springfield, Illinois, the completed work entitled "Endocrine Medicine" in four volumes, one of which is an index.

In 1931 Dr. Engelbach established an office in New York City for the practice of his profession, but in a short while failing health again compelled him to close his office and he returned to Springfield, Illinois, entering St. John's Hospital where he might be near his boyhood home and friends. His death removed from American medicine one of its great physicians and leaders of medical thought.

A. A. WERNER, M.D.

NATIONAL ECONOMY LEAGUE

During the fall of last year the medical profession aligned itself with other interests in protesting to a representative of the Government against the encroachment of the Government into private businesses. The principal criticism presented by the medical profession was the

hospitalization of war veterans in Government hospitals for nonwar connected injuries or illnesses.

The National Economy League, an organization formed to oppose the extravagances of governmental expenditure, is directing much of its activity toward the solution of this problem which is of such vital importance to the medical profession. Publicity used by the league points out that 77.9 per cent of Government hospital cases during 1931 were for disabilities in no way connected with war service; in 1931 hospitalization for nonwar connected cases cost the country more than \$100,000,000; public and charitable hospitals supported by taxes and public charity are comparatively empty while Government hospitals are overcrowded and a demand is being made for even more Federal hospitals.

The activities of the league are principally directed against the governmental expenditures of money in unnecessary channels rather than against Government competition to private business. It happens that the Government is both encroaching on the private business of the physician and hospital and expending unnecessary money in caring for veterans with nonwar disabilities in Government hospitals. While the league in no way restricts its interest to this one extravagance this phase of activity is directly in line with the wishes and needs of the medical profession. In some parts of the country physicians have taken much interest in the league and in St. Louis a few have aligned themselves with this movement. The Missouri branch of the league has offices in the Rialto building, St. Louis, and invites our members to join the movement. There are no dues or other financial obligations in becoming a member.

NEWS NOTES

Dr. H. S. Conrad, St. Joseph, was elected chairman of the staff of the Missouri Methodist Hospital at a meeting January 24. Other officers elected are Dr. A. B. McGlothlan, vice chairman, and Dr. Earl Senor, secretary.

The annual Hodgen Lecture was presented January 10 at the St. Louis Medical Society building, by Dr. Frank C. Mann, Rochester, Minnesota. Dr. Mann, who is connected with the Mayo Foundation for Medical Education and Research, University of Minnesota, spoke on "Observations Upon the Experimentally Produced Peptic Ulcer." The Hodgen Lecture is presented annually under the auspices of the St. Louis Surgical Society and the Medical Fund Society.

Dr. M. Pinson Neal, professor of pathology, University of Missouri School of Medicine, Columbia, has been appointed Missouri member of the Council of the Southern Medical Association to fill the unexpired term of Dr. Walter Baumgarten, St. Louis, who resigned. The appointment was announced by the president, Dr. Irvin Abell, Louisville, Kentucky.

At the annual meeting of the St. Louis Society for the Blind held January 12, the following St. Louis physicians were elected to the board of directors: Drs. J. F. Hardesty, John Green, H. J. Howard, H. D. Lamb, W. H. Luedde, Lawrence T. Post and Fred Reinbeck. Reverend Father A. M. Schwitalla, dean of the St. Louis University School of Medicine, was elected a director.

The Mississippi Valley Dermatological Society met in Kansas City, January 14. Dr. Wm. W. Duke, Kansas City, was the guest of the society and addressed the morning session on "The Allergy Phase of Dermatological Conditions," illustrating his lecture with lantern slides. The afternoon session was a clinic at the Kansas City General Hospital at which unusual dermatological cases were presented for diagnosis and to show the results of treatment. The cases were presented by members from Omaha, Oklahoma City, Topeka, St. Joseph and Greater Kansas City. A round-table discussion of these cases at a banquet concluded the session.

The Medical Association of the Missouri Pacific Railroad held its fourth annual meeting in Kansas City, January 27 and 28. All scientific and business sessions were held in the Muehlebach Hotel. The scientific program consisted of contributions from members of the association and the guest, Dr. Charles M. Rosser, Dallas, Texas, former president of the State Medical Association of Texas, who spoke on "Emergency Head Injuries." A banquet was served in the evening of the first day at which officers of the association and the Missouri Pacific Lines delivered addresses. The principal address was delivered by the president of the railroad, Mr. L. W. Baldwin, who spoke encouragingly of the economic outlook. Other speakers were Mr. John J. Cannon, general manager; Mr. H. J. Mohler, president of the hospital association; Dr. J. R. Evans, Wichita, retiring president, and Dr. O. B. Zeinert, St. Louis, chief surgeon. Dr. J. E. Castle, Kansas City, was elected president for 1933.

Dr. O. H. McCandless, Kansas City, was a guest of the Tri-County Medical Society at Clay Center, Kansas, December 14, and spoke on "Epithelioma."

The St. Louis Urological Society elected the following officers at a meeting December 16: President, Dr. J. Hoy Sanford; vice president, Dr. C. E. Burford, secretary-treasurer, Dr. J. F. Patton, all of St. Louis. The retiring officers were Drs. Bransford Lewis and Grayson Carroll.

Dr. Llewellyn Sale, St. Louis, was elected president of the Missouri Social Hygiene Association at the twenty-fourth annual meeting of the organization in St. Louis, January 9. He succeeds Rev. Alphonse M. Schwitalla, S.J., dean of the St. Louis University Medical School, who had served as president for the last five years. Rev. Schwitalla was elected to the board of directors for a three-year term. Other officers elected were Rev. Dr. George R. Dodson, honorary president (reelected); Jacob M. Lashly, Frank J. Bruno, Drs. Francis L. Bishop and Martin F. Engman, vice presidents, and Dr. Richard S. Weiss, secretary-treasurer. The meeting was attended by 180 persons representing forty-four hospitals, social agencies and other civic organizations.

A training period for reserve officers of the medical departments of the army and navy will be held from February 12 to 25 at the Washington University School of Medicine, St. Louis. The course will be given through the courtesy of the faculty in cooperation with the medical departments of the army and navy. This is classed as an inactive duty period and is without pay or allowance but the time spent is recognized for the same credits as those given for active duty periods. The exceptional clinical advantages of the great medical center at St. Louis combined with the advanced military and naval training make possible a profitable two weeks. The training is open to all medical department officers of the army and navy reserves or the national guard. The program will be under the direct supervision of the faculty of the Washington University Medical School. The military instruction which for the first time includes instruction with reference to the medical service of the navy will be under the direct supervision of Colonel George A. Skinner, Corps Area Surgeon of the army, assisted by Lieutenant Commander Reuben H. Hunt, Medical Corps, United States Navy. Applications for attendance should be addressed to the Surgeon, Seventh Corps Area, Omaha, Nebraska.

Dr. C. Edgar Virden, Kansas City, was elected president of the staff of St. Joseph's Hospital, Kansas City, at a meeting of the hospital staff January 9. Other officers elected were: Chief of staff, Dr. T. J. Beattie; vice president, Dr. Harry L. Jones; treasurer, Dr. C. S. Capell, and secretary, Dr. Frank B. Wallace.

Dr. Curtis H. Lohr, hospital commissioner of St. Louis, has announced the appointment on January 17 of fifty-seven junior interns to the St. Louis City Hospital. Of this number thirty-seven were from the medical schools of St. Louis and Washington universities. The appointments are effective July 1 and are for one year.

The Kansas City Southwest Clinical Society will meet February 21 at the Research Hospital, Kansas City. A joint meeting with the Jackson County (Missouri) and Wyandotte County (Kansas) medical societies will be held in the evening at the General Hospital in connection with a gynecological course to be given at that hospital from February 20 to 25.

A general clinical examination will be held by the American Board of Obstetrics and Gynecology in Milwaukee, Tuesday, June 13, immediately preceding the annual session of the American Medical Association. The next written examination and review of case histories by the board will be held April 1 in cities throughout this country and Canada where there are diplomates who may be empowered to conduct the examinations. The board plans to hold the first of a series of annual dinners for diplomates and their friends on the first day of the scientific session of the American Medical Association in Milwaukee, at which the successful candidates from the examination of the preceding day will be introduced in person. Addresses will be delivered by officers of the board and a round-table conference and general discussion of the activities of the board will follow. Diplomates expecting to be in attendance at the session of the American Medical Association are urged to make reservation for this subscription dinner as early as possible. Further information and application blanks may be obtained from the secretary, Dr. Paul Titus, 1015 Highland building, Pittsburgh, Pennsylvania.

It was erroneously stated in our January issue that Dr. Paul R. Nemours, St. Louis, was a guest of the Bond County (Illinois) Medical Society in Greenville, December 16. This should have read Dr. Neil S. Moore, St. Louis.

OBITUARY

PORTER E. WILLIAMS, M.D.

Dr. Porter E. Williams, Kansas City, a graduate of the Beaumont Hospital Medical College, St. Louis, 1888 (now St. Louis University School of Medicine), died of heart disease, November 18, aged 66 years.

Dr. Williams was born in Versailles, Missouri, the son of Dr. and Mrs. O. A. Williams who resided in Morgan County for many years. He attended the elementary schools at his home and became a surveyor in Government service for a few years before beginning his study of medicine. He practiced for several months with his father than went to Bunceton where he remained in practice until he was appointed superintendent of State Hospital at Fulton in 1905. After four years he returned to private practice at Tipton and Bunceton but in 1917 he became superintendent of State Hospital at St. Joseph where he remained until 1925 with the exception of two years spent as superintendent of the State Hospital at Nevada.

In 1926 he was appointed superintendent of the General Hospital in Kansas City where he remained until his death. In that position he won the regard and esteem of all who came in contact with him by his friendly understanding, his willingness to cooperate and his dignity of manner.

Dr. Williams was a member of the Jackson County Medical Society and a fellow of the American Medical Association. He was a member of the American Psychiatric Association and was on the medical staffs of the Missouri Pacific and the Missouri-Kansas-Texas railroads for a number of years.

By the death of Dr. Williams the younger physicians have lost a staunch friend and advisor. All knew him as a kind and lovable character. Of him, an editorial in the *Jackson County Medical Journal* said "Let us remember him as having fallen in harness—a Missourian of the old school of physicians few of whom remain. A part of the heritage by which we shall remember him is the young assistants who absorbed his philosophy and stand ready to carry on."

He is survived by his widow, Mrs. Gussie E. Williams, and a daughter, Mrs. Roy D. Williams, of Boonville.

NED McGUIRE FULLER, M.D.

Dr. N. M. Fuller, Desloge, a graduate of Tulane University of Louisiana School of Medicine, New Orleans, 1911, died of pneumonia at his home November 20, aged 47 years.

Dr. Fuller was born at Calhoun, Louisiana, the son of a physician. He attended the Louisiana State University preceding his medical training. He began his practice in St. Francois County, Missouri, in 1916 being associated with the late Dr. B. R. Downing and was soon appointed physician for the Desloge division of the St. Joseph Lead Company.

He was a member of the Masonic Order and was interested in community activities. He took an active part in local politics and his political opinions were highly valued by members of his party.

Dr. Fuller was the type of physician whose personality was a source of encouragement and of faith in the knowledge and ability of the physician. He was tireless in his efforts to help those in need of his professional services and he was one of the busiest and most successful physicians in his community. He could have been rated as wealthy had he collected for the services rendered during his twenty years in Desloge, but he gave of his ability cheerfully and quietly, treating all who called upon him regardless of whether they paid or not. The weather was never too bad nor the distance too far to prevent him from answering a call to a sick bed. He was honored and loved in hundreds of homes.

Dr. Fuller is survived by his widow, Mrs. Mattie Rice Fuller, and two daughters.

SOCIETY PROCEEDINGS

COUNTY SOCIETY HONOR ROLL FOR 1933

(UNDER THIS HEAD WE LIST SOCIETIES WHICH
HAVE PAID DUES FOR ALL THEIR MEMBERS)

HONOR ROLL

Mercer County Medical Society, December 10, 1932.

Moniteau County Medical Society, January 13, 1933.

MISSOURI STATE MEDICAL ASSOCIATION—76TH ANNUAL SESSION

Kansas City, May 1, 2, 3, 4, 1933

PRELIMINARY PROGRAM*

SCIENTIFIC PAPERS

Bartlett, Willard, Jr., St. Louis: Renal Complications of Gallbladder Disease.

Campbell, F. B., Kansas City: Title to be announced.

Dorsett, E. Lee, St. Louis: Analysis of 1000 Cases from the Obstetrical Department of the St. Louis County Hospital.

Falk, O. P. J., St. Louis: Treatment of Cardiac Episodes of Middle Life.

Ginsberg, A. M., Kansas City: The Treatment of Nephritis.

Glenn, J. E., and Burford, C. E., St. Louis: The Management of Bladder Diverticulae.

Hertzler, A. E., Kansas City: Title to be announced.

Hunt, Claude J., Kansas City: Title to be announced.

Reis, Carl J., St. Louis: The Increasing Significance of Allergy in the Practice of Medicine.

Thiele, George H., Kansas City: Title to be announced.

Werner, August A., St. Louis: Title to be announced.

Wooley, Paul V., Kansas City: Title to be announced.

* See editorial, page 78.

ADAIR COUNTY MEDICAL SOCIETY

An afternoon session was held by the Adair County Medical Society, December 1, at Kirksville, in the rooms of the Northeast Missouri State Teachers College. It consisted of the examination of over twenty patients by Drs. Richard S. Weiss and L. H. Jorstad, of St. Louis, who ably discussed each case presented. The following diagnoses were made: Blastomycosis, or coccidioidal granuloma; dermatitis, contact, occupational; senile keratosis and epithelioma; cancer of the lower lip; dermatitis, contact, probably household origin; dermatitis from soap and water, occupational; multiple hemangiomas of tongue, and precancerous keratosis of lower lip; allergic eczema front elbows, phytosis of groin; syphilis, left leg; carcinoma of face, involving inner canthus left eye; vesicular dermatitis and epidermophytosis; infantile dermatitis; hypertrophy of mucous membrane of mouth from dental plate; scabies; cancer of breast, with enlarged lymph nodes in axilla; acne; pruritus, in patient with diabetes and myocarditis with ascites; acne; scabies; dermatitis.

The evening session was held at Newman's Cafeteria and began with a dinner at 6 o'clock.

The first scientific presentation of the evening was by Dr. Richard S. Weiss, St. Louis, who gave an illustrated lecture on "Precancerous Dermatoses."

The second and last part of the evening program was an illustrated lecture by Dr. L. H. Jorstad, St. Louis, whose subject was "Cancer of the Lip, Early Diagnosis and Treatment."

Each speaker gave an excellent and highly instructive lecture. Numerous questions were answered by the speakers and interesting discussions were presented by Dr. Harold Swanberg, Quincy, Illinois, and Dr. Frank L. McCormick, Moberly, Missouri.

The following members and guests were present: Drs. J. W. Martin, E. A. Grim, J. F. Dodson, H. J. Rankin, Ross C. Allen, E. E. Bohrer, Seth Thomas, R. O. Stickler, C. R. Green, A. F. Miller, Fred L. Hamilton, E. E. Trunnell, J. M. McKim, A. B. Cramb, Spencer Freeman and Ezra C. Grim, of Kirksville; Dr. J. S. Gashwiler, Novinger; Dr. Don Pierce, Gorin; Dr. F. L. McCormick, Moberly; Dr. H. M. Humphrey, Brashear; Dr. F. E. Luman, Edina; Dr. A. L. Davis, Wyaconda; Dr. A. Arnett, Hurdland; Drs. Frank K. Roy and D. L. Harlan, of Clarence; Drs. David P. Johnson, Walter W. Whitaker and Harold Swanberg, of Quincy, Illinois; Drs. Louis H. Jorstad and Richard S. Weiss, of St. Louis; Dr. J. A. Shacklett, Ethel; Dr. F. R. Dixon, Linneus; Drs. P. M. Baker, A. E. Platter and E. E. Parrish, of

Memphis; Dr. Ida May Nulton, Lancaster; Dr. H. E. Gerwig, Downing, and Dr. N. L. Johnson, Glenwood. J. S. GASHWILER, M.D., Secretary.

AUDRAIN COUNTY MEDICAL SOCIETY

At a meeting of the Audrain County Medical Society held December 8, the following officers were elected: President, Dr. R. S. Williams, Mexico; vice president, Dr. J. Frank Jolly, Mexico; secretary and treasurer, Dr. H. C. Brashear, Mexico; delegate to State Convention, Dr. J. F. Harrison, Mexico; alternate, Dr. P. E. Coil, Mexico.

BUCHANAN COUNTY MEDICAL SOCIETY

The regular meeting of the Buchanan County Medical Society was called to order at the Missouri Methodist Hospital on November 16, at 8 p. m. by the president, Dr. A. E. Burgher, St. Joseph. Sixty-five members were present.

Dr. J. E. Ruhl, 1930 South 11th Street, St. Joseph, was elected a provisional member of this Society.

The scientific program was presented by Dr. Robert Koritschoner, pathologist of Menorah Hospital, Kansas City, and Dr. David S. Dann, radiologist to Menorah and General hospitals, Kansas City. Dr. Koritschoner spoke on "Fundamental Concept of Thrombosis and Embolism" and Dr. Dann on "Interesting Observations in the Roentgen Diagnosis of Stomach and Duodenal Lesions." Both lectures were well presented and illustrated by lantern slides. Our Society as a token of appreciation to the visiting physicians gave them a vote of thanks for their contributions.

Meeting of December 21

The Buchanan County Medical Society was the guest of Dr. G. A. Johns, Superintendent State Hospital No. 2, St. Joseph, at the meeting of December 21.

The following program was rendered by the host: Dinner at 6:30 p. m.; Christmas fantasy, "The Doll Shop," played entirely by patients of the State Hospital; report of clinical and laboratory examinations at the State Hospital, by Dr. G. A. Johns, and three hundred films of the Arctic, by Dr. Richard L. Sutton, Kansas City.

Dr. Johns proved himself a splendid host; the dinner was fine and every part of the program worked like clockwork, which shows that State Hospital No. 2 has had a well qualified superintendent for the last few years.

About one hundred members were present and every one had a jolly good time. All spoke highly of Dr. Johns and the entire staff.

The films of the Arctic and lecture by Dr. Sutton, were both interesting and educational. No one can appreciate them until they are seen.

This was a great meeting and will long be remembered by the members of the Buchanan County Medical Society.

Meeting of January 4

The regular meeting of the Buchanan County Medical Society January 4, was called to order at 8 p. m. by the president, Dr. W. H. Minton, St. Joseph.

In a brief talk the president outlined his plans for the ensuing year and appointed the following to serve on the program committee: Drs. Owen W. D. Craig, chairman, Wm. J. Hunt and T. L. Howdan, of St. Joseph.

Drs. L. G. Balding, and George W. Forman, of St. Joseph, were elected to permanent membership in the Society.

The application for provisional membership of Dr. Cabray Wortley, was read and referred to the board of censors. The committee to investigate and report on the final report of the Committee on Costs of Medical Care submitted the following:

Resolved, That the committee of the Buchanan County Medical Society, appointed to investigate and report our findings in regard to the final report of the Committee on the Costs of Medical Care recommend that the minority reports of said committee as endorsed by the American Medical Association are hereby approved, and that a copy of this resolution be transmitted to the Secretary of the Missouri State Medical Association and a copy be forwarded by him to the American Medical Association. We further suggest that even the disturbing features certain to result from even the minority recommendations are more likely to be disadvantageous to the profession than otherwise.

W. T. ELAM, M.D., Chairman
C. H. WALLACE, M.D.
J. F. OWENS, M.D.

Dr. Leon Paul Forgrave's motion that the report be received by the Society was seconded and carried.

Dr. John I. Byrne, St. Joseph, moved that a copy of this report be placed in the hands of every member of the State legislature. The motion carried.

A copy of the minority reports of the Committee on the Costs of Medical Care, was ordered to accompany the Committee's report of the Buchanan County Medical Society to the members of the State legislature.

EMMETT F. COOK, M.D., Secretary.

CAPE GIRARDEAU COUNTY MEDICAL SOCIETY

The Cape Girardeau County Medical Society met in regular session at the Chamber of Commerce rooms, Cape Girardeau, at 8 p. m., December 12.

The following members were present: Dr. W. H. Wescoat, Cape Girardeau, presiding, Drs. J. H. Cochran, E. H. G. Wilson, Sylvester Doggett, M. H. Shelby and Asa Barnes, of Cape Girardeau, and Dr. B. W. Hays, Jackson.

The following officers were elected: President, Dr. M. H. Shelby, Cape Girardeau; vice president, Dr. Sylvester Doggett, Cape Girardeau; secretary, Dr. C. A. W. Zimmermann, Cape Girardeau; treasurer, Dr. B. W. Hays, Jackson; censors, (3 year term) Dr. D. H. Hope, Cape Girardeau, (2 year term) Dr. M. H. Shelby, Cape Girardeau, and (1 year term) Dr. B. W. Hays, Jackson; delegate, Dr. J. H. Cochran, Cape Girardeau.

It was moved, seconded and carried that Dr. Cochran be empowered to name his alternate to the Kansas City session of the State Association.

A member's transfer card received from Greene County Medical Society was read endorsing Dr. James J. Drace to membership in our Society. Upon ballot Dr. Drace was unanimously elected to membership.

Dr. B. W. Hays, Jackson, read a paper on "Hypertension." This paper was well received and enthusiastically discussed by all present.

M. H. SHELBY, M.D., Secretary.

Meeting of January 9

The January 9 meeting of the Cape Girardeau County Medical Society was held in the Chamber of Commerce building with Dr. M. H. Shelby, Cape Girardeau, president, in the chair.

Members present were Dr. G. W. Vinyard, Jackson, Drs. Asa Barnes, J. H. Cochran, W. N. Howard, E. H. G. Wilson, H. L. Cunningham, J. J. Drace, B. W. Hays, C. A. W. Zimmermann, and D. H. Hope, of Cape Girardeau.

It was moved and seconded that the report of the auditing committee be received, concurred in and filed and that thanks be extended to Dr. Hays for the exemplary manner in which he kept his records. The motion carried.

The president announced his appointment of members to the program committee as follows: Drs. J. H. Cochran, W. H. Wescoat and H. L. Cunningham, of Cape Girardeau.

Dr. C. A. W. Zimmermann read a paper on "Adult Tuberculosis Pulmonalis, the Early Diagnosis and Home Treatment." Discussion was entered into by Drs. B. W. Hays, H. L. Cunningham, J. H. Cochran, M. H. Shelby, E. H. G. Wilson and G. W. Vinyard.

Dr. H. L. Cunningham spoke on "Prevention of Diseases of the Eye" and the paper was discussed by Drs. J. J. Drace, D. H. Hope, C. A. W. Zimmermann and M. H. Shelby.

Dr. Vinyard offered a "P. S." quotation which excited the humor of the gathering as only Dr. Vinyard's quotations can.

Dr. Wilson moved that if our Society is requested to endorse any candidate for commissioner of health of the State, the executive officers be authorized to represent the Society; seconded by Dr. Cunningham and carried.

C. A. W. ZIMMERMANN, M.D., Secretary.

CLAY COUNTY MEDICAL SOCIETY

The Clay County Medical Society met in Liberty, December 29. The meeting was opened with a turkey dinner at The Jack-O-Lantern Cafe. Only fifteen members and wives were at the table; two arrived later. Influenza laid a heavy hand on the usual attendance. There were no invited guests at this business meeting of our society. The Auxiliary met conjointly at the residence of Mrs. W. L. Wyson, where our lady coroner entertained as she knows so well how to do.

After usual routine business of the Society officers for 1933 were elected as follows: President, Dr. R. E. Sevier, Liberty; vice president, Dr. C. H. Suddarth, Excelsior Springs; secretary-treasurer, Dr. J. J. Gaines (reelected), Excelsior Springs; censor for three years, Dr. J. E. Baird (reelected), Excelsior Springs; delegate, Dr. S. D. Henry, Excelsior Springs, and alternate, Dr. W. H. Goodson, Liberty.

Our retiring president, Dr. S. D. Henry, Excelsior Springs, was unable to attend this meeting being in an Omaha hospital for surgical attention. He wrote the Society a most encouraging letter which was read by the secretary.

Round table talks and case reports by members followed. Dr. J. E. Musgrave, Excelsior Springs, Dr. W. H. Goodson, Liberty, and other members detailed many cases of profound interest and the discussions following were enjoyed fully. There is something to these heart-to-heart meetings; sacred chords are awakened to kindest, deepest fraternal feeling.

J. J. GAINES, M.D., Secretary.

HOWELL-OREGON-TEXAS COUNTY MEDICAL SOCIETY

At a meeting of the Howell-Oregon-Texas County Medical Society held in West Plains, October 24, a resolutions committee consisting of Drs. J. C. B. Davis, Willow Springs; E. Claude Bohrer, West Plains, and D. D. Cox, Pomona, was appointed to draft resolutions dealing with the relation of the medical profession to the community and to the public schools with special reference to physical ex-

amination of the school children. The following resolutions were presented and after discussion were approved unanimously:

Resolutions

WHEREAS, The entire medical profession, guided by humanitarian and scientific motives as history will reveal, has from the beginning of time been deeply interested and is still deeply interested in the promotion of the good health of the people, and

WHEREAS, The field of medicine is gradually being abusively encroached upon by various organizations, private and public, demanding free service of the physician to a degree as to be detrimental to his financial welfare as well as to the best interests of the people, the latter principally because such services (especially examinations) must, by the very manner in which they are habitually conducted, be superficial and inadequate, and

WHEREAS, The medical profession willingly as well as cheerfully always takes care of its full quota of charity work and as a principle is opposed to giving free service to those who are able to pay for it, except in a time of disaster, therefore be it

Resolved, That the members of the Howell-Oregon-Texas County Medical Society, desiring to uphold the altruistic principles of the profession, willingly offer their services gratuitously to the worthy poor in cooperation with and as recommended by reputable organizations, preferring individual rather than group examinations; be it further

Resolved, That this resolution as adopted by the Society be as binding on its members as any clause of the By-laws. Specifically, a violation of this resolution by a member of our Society renders him liable to expulsion; be it further

Resolved, That a copy of this resolution be sent to each member of the Howell-Oregon-Texas County Medical Society, the Honorable Henry Caulfield, Governor of the State, to the editor of the MISSOURI STATE MEDICAL JOURNAL, the editor of the *Journal of the American Medical Association* and the secretary of the Parent-Teachers' Association.

J. C. B. DAVIS

E. CLAUDE BOHRER

D. D. COX

Committee

JASPER COUNTY MEDICAL SOCIETY

The Jasper County Medical Society met at Joplin Dec. 13 with ten members and three visitors present.

Resolutions of respect for the daughter of Dr. J. W. Barson, Joplin, and for the mother of Dr. M. O. Coombs, Joplin, were read and approved and the committees discharged. The resolutions were:

Resolved, That we desire to express our sympathy to our fellow member, Dr. J. W. Barson, and his family, in their bereavement in the loss of his daughter, Hazel, and

Resolved, That this resolution be spread on the minutes of our society and a copy be sent to the family of Dr. Barson.

Resolved, That we desire to express our sympathy to our fellow member, Dr. M. O. Coombs, and his family in their bereavement in the loss of his mother, and

Resolved, That this resolution be spread on the minutes of our society and a copy be sent to the family of Dr. Coombs.

A motion carried that the president appoint a committee with power to make arrangements for the dinner and installation of officers on January 3.

The secretary announced that through the courtesy of the Eli Lilly Company sound motion pictures depicting the development and manufacture of insulin would be available on the night of January 20.

The applications of Dr. Frances Rosenthal, and Dr. Raymond Kuhn, were read and referred to the board of censors.

Dr. E. D. James, Joplin, reported a case of dermatitis due to the use of adhesive tape. In a discussion it was brought out that adhesive free from zinc oxide was less irritating.

The scientific program was opened by Dr. L. B. Clinton, Carthage, who spoke on "Surgical Procedures in Children." The paper was very interesting and instructive. The paper was freely discussed, the discussion being closed by Dr. Clinton.

A motion picture entitled "Glass Magic" was shown depicting the making of glass for lenses and the manufacture of the lenses. The film was furnished

by the Bausch & Lomb Optical Company through the courtesy of Mr. Homer Wright, local manager of the Barnett & Ramel Optical Company.

Meeting of January 3

The Society met January 3, at Joplin. This was the annual meeting for the installation of officers and as is customary no business was transacted.

About seventy-five members and guests including dentists and druggists of the district were present.

Dr. Lloyd B. Clinton, Carthage, conveyed to the Society a message from our state secretary, Dr. E. J. Goodwin, with whom he had been in long distance communication. Dr. Goodwin urged that all members make an extra effort to be loyal to the society and to take an active part in its work.

After an excellent dinner the program committee furnished a "Meller Dramer" entitled, "The Big Surprise or The Man Who Paid His Bill." The cast of characters was composed of members of the society and the lines exposed some of the hobbies, idiosyncrasies and foibles of the members.

Following this a short talk was given by Mr. Cowgill Blair, editor of the Joplin *Globe*, on the relation of the medical profession to the laity.

PAUL W. WALKER, M.D., Secretary.

NODAWAY COUNTY MEDICAL SOCIETY

The regular monthly meeting of the Nodaway County Medical Society was held at the Sisters of St. Francis Hospital, Maryville, December 9. The meeting was called to order by the vice president, Dr. R. C. Person, Maryville, at 7:45 p. m.

Members present were Drs. C. T. Bell, Hiram Day, L. E. Dean, C. V. Martin, R. C. Person, and William M. Wallis, Jr., of Maryville; Dr. Charles D. Humbert, Barnard, and Dr. C. W. Kirk, Hopkins. Guests present were Drs. J. Lawrence Jones and David S. Dann, Kansas City; Drs. W. R. Jackson and Loren E. Egley, Maryville; Dr. B. F. Byland, Burlington Junction; Drs. Earl Braniger, E. L. Enis, Jesse Miller, and H. L. Stinson, dentists of Maryville, and four sisters from the hospital staff.

Our guests from Kansas City came as lecturers for the evening through the courtesy of the Postgraduate Committee of the Missouri State Medical Association. Dr. J. Lawrence Jones, from the staff of Menorah Hospital, Kansas City, presented a paper on "Intracapsular Fractures of the Neck of the Femur: An Original Method of Treatment." He reviewed the surgical pathology involved in this condition, and told of the disadvantages of casts and bone grafts. He then presented a simple rustless steel screw device of his invention and showed its manner of use in securing an artificial impaction of a detached head of a femur. His paper was illustrated with models and lantern slides of radiographs, photographs and a new device for securing lateral roentgen ray views of the upper part of the femur. He quoted case histories from his own practice showing the efficiency of his new method. The paper was discussed by Drs. C. V. Martin, C. T. Bell and Wm. M. Wallis, of Maryville, and was accorded much interest.

Dr. David S. Dann, Kansas City, also from the staff of Menorah Hospital, spoke on "X-Ray Studies of the Spine," and illustrated his discourse with lantern slides of radiographs. He divided the pathological findings commonly seen in roentgen ray views of the spinal column into developmental anomalies, the effects of trauma, inflammations, tumor formations and degenerative changes. He reviewed the ossification centers of the vertebrae from embryology,

and showed the congenital factors involved in spina bifida, in sacralization of the fifth lumbar vertebra and in spondylolisthesis. His roentgen ray views included compression fractures of the spine, "chips" fractures and spur formations. The inflammatory conditions illustrated were Pott's disease in "central," "intervertebral" and "anterior" types, and Charcot's disease. The speaker also touched upon prolapse and herniation of the nucleus pulposus of the intervertebral disk, calcification and ossification of the disks, hypertrophic arthritis and spondylitis deformans.

Dr. Dann discussed briefly the work of the cancer clinic at Menorah Hospital.

The committee of censors appointed at the November meeting reported that they had verified the statements in the applications of Drs. B. F. Byland, Burlington Junction, and Joe M. Boyles, Conception Junction, for admission into and membership in the Nodaway County Medical Society and the Missouri State Medical Association, and had found them correct. Dr. Kirk moved that the rules be suspended and that the secretary be instructed to cast the ballot of the Society. The motion was seconded by Dr. Martin, and carried. The secretary expressed his pleasure in the privilege of casting the Society's ballot which elected Drs. Byland and Boyles to membership.

The secretary presented a transfer card issued by the St. Louis Medical Society on November 16, 1932, to Dr. Loren E. Egley, of Maryville. Dr. Humbert moved that the transfer be accepted and that Dr. Egley be elected to membership in the Nodaway County Medical Society. The motion was seconded by Dr. Dean, and carried and Dr. Egley was declared elected.

The following officers were elected: President, Dr. Robert C. Person, Maryville; vice president, Dr. Charles W. Kirk, Hopkins; secretary-treasurer, Dr. Charles D. Humbert, Barnard; delegate to the Missouri State Medical Association, Dr. Charles D. Humbert, Barnard; alternate delegate to the Missouri State Medical Association, Dr. Leslie E. Dean, Maryville.

CHARLES D. HUMBERT, M.D., Secretary.

RANDOLPH-MONROE COUNTY MEDICAL SOCIETY

The Randolph-Monroe County Medical Society met in regular session December 13, in Moberly. The meeting was preceded by an excellent meal consisting of turkey and ham and all the trimmings. Due to the extreme cold weather and an unusual amount of sickness several were unable to attend. Dr. and Mrs. L. O. Nickell, Moberly, and Dr. M. C. McMurry, Paris, were unable to attend because of sickness. Dr. R. A. Wood, Clark, sent a special delivery letter, and Dr. D. A. Barnhart, Huntsville, called a short time before the meeting; both expressed their regrets that they were unable to attend because of an unusual amount of work.

No program was arranged because it was intended as a get-together meeting only where one full meal of the year could be served. Plates amply filled were arranged for fifty, and the twenty-two present attempted to assume the table duties of fifty but were unsuccessful in their efforts to empty the plates.

The ones present extended their sympathy and expressed their desire for the early recovery of Dr. McMurry and Dr. Nickell who were ill.

Those present who ate more than double the re-

quired amount were: Dr. and Mrs. J. F. Flynt and Mrs. M. C. McMurry, of Paris, Dr. J. B. Stokes, Excello; Dr. and Mrs. C. H. Dixon, Dr. and Mrs. O. O. Ash, Dr. and Mrs. L. E. Huber, Dr. and Mrs. C. C. Smith, Dr. and Mrs. F. L. McCormick, Dr. H. C. Griffiths, Dr. T. S. Fleming, Dr. R. D. Streeter, Dr. and Mrs. P. C. Davis, Dr. and Mrs. Jesse Maddox and Dr. Max E. Kaiser, of Moberly.

Following this excellent meal came the election of officers which went off so quietly we had no fun. When one was nominated, another would move that the rules be suspended and that he be elected by acclamation. The results were: President, Dr. P. C. Davis, Moberly; vice president, Dr. M. C. McMurry, Paris; secretary-treasurer, Dr. F. L. McCormick, Moberly; delegate, Dr. C. H. Dixon, Moberly; censor (3 year term), Dr. H. C. Griffiths, Moberly. Dr. C. C. Smith still has two years to serve as censor and Dr. T. S. Fleming has one year.

F. L. McCORMICK, M.D., Secretary.

WRIGHT-DOUGLAS COUNTY MEDICAL SOCIETY

The Wright-Douglas County Medical Society met in the office of Dr. L. T. Van Noy, Norwood, December 15, with the following members present: Drs. R. A. Ryan, A. C. Ames and L. G. Livingston, of Mountain Grove, and Dr. L. T. Van Noy, Norwood. Neither the president nor the vice president being present the meeting was called to order by the secretary, Dr. A. C. Ames, Mountain Grove.

As Dr. Van Noy had two patients waiting for examination, the consideration of their cases was the first thing on the program and occupied the greater part of the afternoon. They were both men past middle age who had led active lives until their failing health had compelled them to slow down. The first patient complained of general failing strength and loss of appetite, with constipation. He was found to have a pulse of 120, blood pressure of 270/120 and an abundant deposit of albumin in the urine. Dr. Van Noy reported that on some tests he had found sugar and on others he had not. The case was diagnosed as arteriosclerosis with chronic nephritis and he was advised to rest in bed, to keep the bowels open with salines, to use more milk and less meat in his diet and to realize that his condition was more serious than he had been willing to admit.

The second patient had suffered with asthma for a long time and reported frequent hemorrhages from the lungs, loss of weight and inability to take any active exercise on account of shortness of breath. He reported a roentgen ray examination showing lung involvement which other examiners had said was not tuberculosis. A blood sample was taken for a Wassermann, which it was hoped, would throw further light on the condition. His blood pressure was but 120 systolic.

The application for membership of Dr. L. G. Livingston, Mountain Grove, was received and without referring it to the censors he was unanimously elected to membership. Dr. Livingston then read a paper on "Myxedema," with report of a case with photographs showing that considerable improvement had followed a short course of thyroid medication; the patient became dissatisfied because improvement was not more rapid and discontinued the treatments too soon for them to have been of as great benefit as they probably would have been had they been more persistently continued.

Dr. Ames showed some photographs of an acephalia

monster he had delivered a few years ago and also reported another case not photographed. He showed another photograph of a child with spina bifida who lived three weeks with entire absence of the posterior arches of the lumbar spine and overlying tissues, the spinal cord open and spread out to the two sides with the interior surface exposed to view.

This meeting was the regular date for election of officers but there were so few present that it was postponed until the next meeting in the spring.

A. C. AMES, M.D., Secretary.

WOMAN'S AUXILIARY

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

11th Annual Meeting, Milwaukee, 1933

President, Mrs. James F. Percy, Los Angeles, Calif.

President Elect, Mrs. James Blake, Hopkins, Minnesota.

WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION

9th Annual Meeting, Kansas City, 1933

President, Mrs. David S. Long, Harrisonville.

President-Elect, Mrs. Hudson Talbott, St. Louis.

ORGANIZED COUNTIES AND PRESIDENTS

COUNTY	PRESIDENT AND ADDRESS
Boone.....	Mrs. C. M. Sneed, Columbia
Buchanan.....	Mrs. C. H. Werner, St. Joseph
Cass.....	Mrs. H. A. Briery, Peculiar
Cape Girardeau.....	Mrs. W. W. Ford, Gordonville
Clay.....	Mrs. H. J. Clark, Excelsior Springs
Cole.....	Mrs. James T. Leslie, Jefferson City
Gentry.....	Mrs. W. S. Campbell, Albany
Greene.....	Mrs. W. C. Cheek, Springfield
Jackson.....	Mrs. Wilbur A. Baker, Kansas City
Jasper.....	Mrs. Ulysses G. Hoshaw, Joplin
Johnson.....	Mrs. William R. Patterson, Warrensburg
Lafayette.....	Mrs. Odus Liston, Oak Grove
Linn.....	Mrs. Ola Putman, Marceline
Livingston.....	Mrs. Reuben Barney, Chillicothe
Miller.....	Mrs. G. D. Walker, Eldon
Randolph-Macon.....	Mrs. P. C. Davis, Moberly
St. Louis City.....	Mrs. A. G. Wichman, St. Louis
Saline.....	Mrs. L. S. James, Blackburn
Vernon-Cedar.....	Mrs. T. B. Todd, Nevada
26th District.....	Mrs. W. H. Breuer, St. James

As president of the Missouri Federation of Women's Clubs, our Auxiliary president, Mrs. David S. Long, Harrisonville, went to Washington, D. C., January 8 to attend the meeting of the board of the general Federation of Women's Clubs. In that organization she is chairman of public welfare of zone 4 which comprises Indiana, Illinois, Iowa, Michigan, Missouri and Ohio. Following the Federation meeting Mrs. Long attended the Conference on the Cause and Cure of War.

The board of the State Auxiliary held a meeting in St. Louis, January 23. Mrs. Long invited an officer of the national auxiliary to attend and address this meeting. Expressing her inability to accept this invitation the woman said, "I deeply regret that I cannot be with you, for like the empty pitcher that comes to the well, I would return home brimful of the water of life which your Missouri Auxiliary has in such

abounding quantities." You see we have a reputation outside of the state. "For the good of the cause" and in justice to our worthy president may we continue our Auxiliary activities in such manner and measure that we shall live up to the good opinion acquired in the past.

Mrs. Horace J. Whitacre, Tacoma, Washington, has been elected national first vice president and ex officio chairman of organization, filling the office left vacant by the advancement of Mrs. Percy to the presidency of the Woman's Auxiliary to the American Medical Association. Mrs. Percy says:

It is a great asset to the national auxiliary to have Mrs. Whitacre become again a member of the national board. She has given a remarkable demonstration of her executive ability in the organization of her own state auxiliary, and as its first president, she received merited recognition during the New Orleans convention. She brings to her new office wisdom and a rich experience from which we shall reap the benefits.

This it seems is a good time to bring to the several hundred Auxiliary members in Missouri some items of news concerning the auxiliaries in other states. The items follow:

In Kentucky the auxiliary compiled the state health laws in a question-and-answer form for use in women's clubs. Later this form was used by the state health department in issuing a pamphlet for use in public schools. Another project was an essay contest in the schools on "The Value of the County Health Unit."

In Wisconsin an essay contest is to be held this spring, a health essay based on readings of this year's *Hygeia* for February, March and April.

From Georgia is the report of an auxiliary health film committee which has exhibited health films throughout the state. The Georgia State Health Department requested the auxiliary to take charge of the publicity for twenty regional health conferences in the state. This was most successfully done. The Georgia State Medical Society prepared an outline for mother welfare health education which has been carried to lay organizations by the auxiliary. The federated Clubs and Parent Teacher's Association groups are using these outlines. The Georgia State Health Department and the state medical society are supplying the material for studies and speakers for three minute talks.

A medical benevolence fund for the benefit of the needy of the medical profession has been established in several states. Last year the Pennsylvania auxiliary contributed more than \$2000 to this fund. Pennsylvania has made a definite advance developing periodic health examination both with the laity and with doctors' families.

North Carolina is the first state to employ a full time man to plan and execute an educational campaign to carry the message of the need of periodic health examinations to the people of every county in the state.

From the recent out-going president of the Virginia auxiliary, Mrs. J. Allison Hodges, Richmond, comes a message from which all of us may gain profit. Mrs. Hodges says:

No matter how efficient and faithful your officers or how excellent your program, the success of the auxiliary depends upon the work and support of the individual members.

I will offer a few suggestions:

First: Attend the meetings regularly. If you cannot write a paper or make a speech, be an appreciative listener. Your presence will encourage the president.

Second: If possible accept cheerfully the work assigned you and always be willing to do your part.

Third: Answer letters promptly. Often a post card is all

that is necessary and should be written at once. Nothing delays the work or is more annoying to a busy officer than to have to wait for days for a reply.

Fourth: Make constructive, not destructive, criticism—the former is always welcome.

"A good thing to remember and a better thing to do—

Is to belong to the construction gang and not the wrecking crew."

MISCELLANY

FINAL REPORT OF COMMITTEE ON THE COSTS OF MEDICAL CARE

Five years of work by the fifty members and research staff of the Committee on the Costs of Medical Care have culminated in this final report, entitled "Medical Care for the American People." The majority report was favored by the following:

Private Practice.—Lewellys F. Barker, M.D.; Walter P. Bowers, M.D.; J. Shelton Horsley, M.D.; Stewart R. Roberts, M.D.; Richard M. Smith, M.D.; Walter R. Steiner, M.D., and Rollin T. Woodyatt, M.D.

Institutions and Special Interests.—W. Irving Clark, M.D.; William Darrach, M.D.; Louis I. Dublin, Ph.D.; Elizabeth Fox, R.N.; Ambrose Hunsberger, Ph.D.; Alfred Owre, D.M.D., M.D.; W. S. Rankin, M.D.; Mary M. Roberts, R. N., and Winford H. Smith, M.D.

Public Health.—George H. Bigelow, M.D.; Herman N. Bundesen, M.D.; Haven Emerson, M.D.; John Sundwall, M.D., and C. E. A. Winslow, Dr.P.H.

Social Sciences.—Michael M. Davis, Ph.D.; William T. Foster, Ph.D.; Wesley C. Mitchell, Ph.D.; William F. Ogburn, Ph.D., and Henry C. Taylor, Ph.D.

The Public.—Winthrop W. Aldrich; Morris L. Cooke, D.Sc.; Mrs. William Kinnicutt Draper; Homer Folks, LL.D.; John P. Frey; Mrs. Walter McNab Miller; William J. Schieffelin, Ph.D.; Amelia Sears, and Ray Lyman Wilbur, M.D.

A summary of the majority report follows:

I

"The Committee recommends that medical service, both preventive and therapeutic, should be furnished largely by organized groups of physicians, dentists, nurses, pharmacists and other associated personnel. Such groups should be organized, preferably around a hospital, for rendering complete home, office and hospital care. The form of organization should encourage the maintenance of high standards and the development or preservation of a personal relation between patient and physician.

II

"The Committee recommends the extension of all basic public health services—whether provided by governmental or nongovernmental agencies—so that they will be available to the entire population according to its needs. This extension requires primarily increased financial support for official health departments and full-time trained health officers and members of their staffs whose tenure is dependent only on professional and administrative competence.

III

"The Committee recommends that the costs of medical care be placed on a group payment basis, through the use of insurance, through the use of taxation, or through the use of both these methods. This is not meant to preclude the continuation of medical service provided on an individual fee basis for those who prefer the present method. Cash benefits, i.e.,

compensation for wage-loss due to illness, if and when provided, should be separate and distinct from medical services.

IV

"The Committee recommends that the study, evaluation and coordination of medical service be considered important functions for every state and local community, that agencies be formed to exercise these functions, and that the coordination of rural with urban services receive special attention.

V

"The Committee makes the following recommendations in the field of professional education: (A) That the training of physicians give increasing emphasis to the teaching of health and the prevention of disease; that more effective efforts be made to provide trained health officers; that the social aspects of medical practice be given greater attention; that specialties be restricted to those specially qualified; and that postgraduate educational opportunities be increased; (B) that dental students be given a broader educational background; (C) that pharmaceutical education place more stress on the pharmacist's responsibilities and opportunities for public service; (D) that nursing education be thoroughly remolded to provide well educated and well qualified registered nurses; (E) that less thoroughly trained but competent nursing aides and attendants be provided; (F) that adequate training for nurse-midwives be provided, and (G) that opportunities be offered for the systematic training of hospital and clinic administrators."

The first chapter surveys "The Present Status of Medical Care." It reports that 177,000 physicians and dentists, with some 900,000 others at an annual expense of \$3,647,000,000, so distribute their services that those in the lower income groups, while suffering as much or more sickness, receive far less medical service than those with a greater income.

There is a lack of preventive health care; indeed, "niggardly appropriations for public health work." The burden of sickness cannot be measured by averages, because of the extreme unevenness with which it is distributed. Fifty per cent of the families in the United States have incomes of less than \$2,000, which means that "even less-than-average charges for medical service, therefore, are more than many of our families can bear."

One conclusion reads: "*Certainly no solution to the problems of medical costs can be reached through a reduction in the average of professional incomes*" (italics in original). This average is none too high now to attract a high type of practitioner and permit progress through graduate training and study.

The Committee attempts from the report of some of these investigations to calculate the cost of complete medical care and concludes that "all needed medical care of the kind which people customarily purchase individually could be provided in urban regions at least, at a cost, excluding capital charges, of \$20 to \$40 per capita per annum."

The second chapter discusses "The Essentials of a Satisfactory Medical Program." Six basic essentials are enumerated:

"1. The plan must safeguard the quality of medical service and preserve the essential personal relationship between patient and physician.

"2. It must provide for the future development of preventive and curative services in such kinds and amounts as will meet the needs of substantially all the people and not merely their present effective demands.

"3. It must provide services on financial terms

which the people can and will meet, without undue hardship, through either individual or collective resources.

"4. There should be a full application of existing knowledge to the prevention of disease, so that all medical practice will be permeated with the concept of prevention. The program must include, therefore, not only medical care of the individual and the family but also a well organized and adequately supported public health program.¹

"5. The basic plan should include provisions for assisting and guiding patients in the selection of competent practitioners and suitable facilities for medical care.

"6. Adequate and assured payment must be provided to the individuals and agencies which furnish the care."

Having set up these standards, the Majority Report selects three lines of approach to the solution of its problem:

"(a) The development of types of organized or group practice that will more effectively and economically meet the community's medical needs.

"(b) The distribution, over a period of time and over a group of families or individuals, of the costs of service.

"(c) Provision for the planning and coordination, on a local and regional basis, of all health and medical services."

It is evident that the program of the Majority Report centers around "provision of service through organized groups." The groups studied on which conclusions are based covered only fifty such groups; conclusions as to the financial operation of such clinics and especially as to their net and gross income are based on the information furnished by twenty-seven such clinics.

The Majority Report sets up "standards" for group practice and among these emphasizes the statement that "*lay groups organized for profit have no legitimate place in the provision of this vital public service*" (italics in original). This standard, the Committee seems to fail to note, would eliminate many of the examples of group practice on which it depends for the argument previously mentioned leading to the estimate of annual cost.

"Inevitably the Committee has been led to the conclusion that the costs of medical care should be distributed over groups of people and over periods of time." This leads to the adoption of insurance as a major recommendation. The participation of insurance companies is rejected and taxation accepted only in a secondary form. Having eliminated these, the Majority Report is brought to the somewhat indefinite conclusion that "there should, therefore, be an agency in each community through which the lay and the professional groups concerned in providing and financing medical services could consult, plan and act in behalf of the best provision of medical resources which the community can afford." The character of this "agency" remains indefinite throughout the report.

Chapter three sets up "An Ultimate Objective in the Organization of Medicine." "The keystone of the concept of a satisfactory medical service for the nation is the development of one or more non-profit 'community medical centers' in every city of approximately 15,000 population or more." Then follows a description of such an imaginary center. The Majority Report passes lightly over such questions as the

1. The term "public health program" is meant to include the work of the official health departments and of voluntary health agencies.

possibility of the redistribution of great medical centers that have been established in most large cities for educational, political, financial or other purposes which render them ill adjusted to fit into such a program.

It assumes that existing hospital organizations can be so transformed but offers little information as to the methods by which this change may be brought about. There is much talk of "coordination and control of services" but there is no definite statement as to what is to constitute this important factor in the program.

Chapter four considers "Plans and Experiments Now Under Way" and lists twenty-five such experiments. Four of these are "under professional sponsorship"; four "under consumer sponsorship"; thirteen are listed as "under community sponsorship with professional participation"; one "under joint sponsorship of professional and consumer groups," and three "under commercial sponsorship." All of these are treated without the specific criticisms necessary to inspection of the foundation stones on which the structure of the national medical service is to be erected.

The Committee concludes that:

"These twenty-five types of development in the United States and the many developments abroad show a ferment at work in medical practice which contains great possibilities for good and evil. The Committee is aware of the fact that some of the plans are mere attempts to capitalize for private gain the people's need for better medical service. It is equally aware of the dangers inherent in other plans. Each should be viewed as an experiment and subjected to the careful evaluation that is given in a scientific laboratory. Some of them appear to the Committee to be very promising."

The fifth chapter includes "The Recommendations of the Committee" previously here quoted. The somewhat vague character of the report is excused by the statement that "the Committee believes that its obligations require it to think ahead for twenty or thirty years, as well as for the next five or ten years and to present distant as well as immediate goals."

The Committee's first recommendation that medical service "should be furnished largely by organized groups of physicians, dentists" and so on does not take account of the fact that these groups are already professionally organized in their own associations. Indeed, the existence of these professional associations is almost entirely ignored in the Majority Report.

"The Committee's most fundamental specific proposal is the development of suitable hospitals into comprehensive community medical centers."

Industrial medical service is cited as another step toward the realization of this recommendation, and the Majority Report suggests "that free choice of practitioners should be allowed insofar as practicable."

University medical service is also to be fitted into this scheme. "In 'College towns' it may frequently be feasible to expand the university medical service into a community medical center which serves townspeople as well as students."

The Majority Report recognizes the necessity of measures to maintain the quality of medical service in groups; no recommendations are made concerning relationships with professional associations, the most important bodies for maintaining standards.

The recommendation which will undoubtedly attract the most attention is that "the costs of medical care be placed on a group payment basis, through the use of insurance." The discussion is extremely in-

definite. The comments interspersed clearly reflect sharp divisions of opinion in the Committee.

It is suggested that "a state medical society might initiate and standardize the organization of group practice in local areas and serve as a negotiating or mediating body in making the arrangements for group payment." On the whole, however, the Majority Report seems to incline to a voluntary insurance scheme with subsidies from taxation.

There is also the conclusion that making "individual practice and not group practice the logical foundation of the whole system . . . has been one of the chief disadvantages which European countries have faced under compulsory insurance." Examples or evidence in support of this conclusion are not made available.

The Majority Report persistently emphasizes the importance of groups; it looks on insurance "as the most effective possible stimulant to the formation of such groups." It is hard to determine whether the groups are to be the basis or the objective of the program.

Confronted with the problem of the "control of competition," which has hitherto evidently produced deterioration in most of the schemes of contract practice which are discussed, the Majority Report proposes the following devices for its control:

"(a) Provision of medical service in increasing proportions by organized non-profit groups with community backing and control.

"(b) State regulation of the finances to assure actuarial soundness.

"(c) The formulation of general standards and policies, the regulation of charges, and the arbitration of difficulties by the state medical and dental societies or by an officially appointed medical board nominated in large part by the societies."

The Majority Report urges a study by professional groups with lay participants as a preliminary to the installation of any program.

In the final chapter, "The Challenge of the Future," appears recognition of the place of such professional associations. The report says:

"The cooperation of the professional groups in community or state leadership is essential. Their stake in these issues is very large; their interest is continuing. They should instigate as well as guide. The crucial point in the generalship of the forces at work is, perhaps, the development of a proper relation between the professional and the lay groups. The public should recognize the central place of the professional groups in determining standards and methods. The professions should recognize their ultimate responsibilities to the public. The control of undesirable commercial enterprises in this field will depend largely on the watchfulness of the professional bodies, on their ability to enlist lay cooperation, and on the development of sound and successfully operating non-commercial plans.

"Continued study of the complex problems of medical economics is of the first importance. The Committee's investigations have opened a way. Fortunately, professional societies are establishing bureaus and committees on medical economics. Because a university has the unique advantage of having both medical and social scientists in one organization, the Committee has formally recommended to the universities of the country that they conduct research in this field."

MINORITY REPORTS

Two minority reports and two statements constitute

the views of those members of the committee who found themselves in conflict with the general tone or trend of the majority report.

FIRST MINORITY REPORT

The first minority report, which was signed by A. C. Christie, M.D., George E. Follansbee, M.D., M. L. Harris, M.D., Kirby S. Howlett, M.D., A. C. Morgan, M.D., Alphonse M. Schwitalla, Ph.D., N. B. Van Etten, M.D., Olin West, M.D., and Robert Wilson, M.D., draws attention to the failure of the Committee to show by facts that "organization" can accomplish what is claimed for it in the majority report. There is nothing in the experience of the medical profession to show that the "Community Medical Center" is a workable scheme or that it would not contain evils of its own which might be worse than the evils it is supposed to alleviate. This Medical Center Plan is suggestive of the great mergers in industry in which mass production and centralized control are the principal features. It apparently disregards the fundamentals which make medicine a personal service and which require that the individual patient and not diseases or economic classes or groups be the object of medical care.

The objections to the Medical Center Plan are summarized as follows:

1. It would establish a medical hierarchy in every community to dictate who might practice medicine there.

2. It would be impossible to prevent competition among the many such centers necessary for large cities; cost would inevitably be increased by the organization necessary to assign patients to the various centers. This would add to the evils of medical dictatorship those of a new bureau in the local government with its attendant cost.

3. Continuous personal relationship of physician and patient would be difficult if not impossible under such conditions.

In the opinion of this minority group, the question of "Industrial Medical Service" has not been adequately or fairly dealt with in the majority report. For each of the favorable reports published (publications Nos. 5, 18 and 20) many instances could be cited wherein the results of industrial medical services have been exceedingly unfavorable. It is pointed out that in industrial medical services, mutual benefit associations, so-called health and hospital associations, and other forms of contract practice, no means have been found to prevent destructive competition between individuals or groups concerned with these movements. The studies published by the Committee show only the favorable aspects. They were selected because they were considered the most favorable examples of this type of practice in the United States. For each of these plans a score of the opposite kind can be found.

Utilization of subsidiary personnel is nothing new in medical practice. Already there is constant temptation in many fields to permit technicians to perform duties entirely unjustified by their knowledge and training. The minority expresses a word of caution relative to the dangers involved in permitting non-medical technicians to assume the duties which only physicians should undertake.

The Committee's first recommendation that medical service "should be furnished largely by organized groups of physicians, dentists" and so on is apparently predicated on the Committee's study on "Private Group Clinics." This minority group believes that the establishment of such clinics is in line of progress when they are a natural outgrowth of local condi-

tions, but the studies published by the Committee, in the opinion of the minority, were far too few in number to constitute a safe base on which to erect so large and revolutionary a structure as is proposed. The majority report fails to consider the fact that multiplication of clinics or groups in large communities results in duplication of expensive equipment far beyond the needs of the community. Such a multiplication of medical facilities, instead of reducing overhead and the costs of medical care to the community, adds to this cost through the duplication of plants. It is significant to note that the overhead in private medical practice averages only about 2 per cent higher than for medical groups in the lower brackets of gross income. As the gross income rises, the ratio of overhead becomes progressively less significant.

Other disadvantages of group practice are: restriction of freedom of action in respect to vacations, study, travel, attendance on scientific meetings and even publication of medical articles to all members except the heads of the group; comparatively static income of members of a group except that of the owner or owners; salary cuts, then discharge of employees to reduce overhead in times of depression; disruption of groups through death or disability of some able man or men around whom the group has been built, and the difficulty with which physicians are able to find employment in another group or are able to enter private practice when a group closes.

In spite of the extensive data available on the insurance systems of Europe and the evidence which can be produced to show that voluntary health insurance schemes have everywhere failed, the majority of the Committee makes the definite recommendation that this country adopt the thoroughly discredited method of voluntary insurance. A system of voluntary health insurance tied to the visionary medical center plan, which is offered as the "keystone" of all medical service, would plunge the medical profession into similar or more difficult problems than have been experienced by the European profession in its struggle against the various European insurance schemes. In the United States, contract practice is essentially health insurance and has already given rise to destructive competition among professional groups, inferior medical service, loss of personal relationship of patient and physician, and demoralization of the profession. It is clear that all such schemes are contrary to sound public policy and that the shortest road to commercialism of the practice of medicine is through the supposedly rosy path of insurance.

The objections to compulsory health insurance are almost as compelling to this minority group as are those to voluntary insurance. Proof of the evils of the compulsory system is at hand in our own experience in this country with the only compulsory system with which we have yet had to deal, workmen's compensation insurance. Under workmen's compensation, groups are soliciting contracts, often through paid lay promoters; laymen are organizing clinics and hiring doctors to do the work; standards of practice are being lowered; able physicians outside the groups are being pushed to the wall; the patient is forced by his employer to go to a certain clinic, and the physician is largely under the control of the insurance companies. These are not visionary fears of what may happen but a true picture of widespread evils attending insurance practice. No better example should be needed of what must happen to medical care if compulsory insurance is extended to families.

The total cost of medical care is usually increased when it is paid for through insurance, because the

cost of operation of the insurance plan must be added to the cost of medical care and the number of persons sick and the number of days' sickness per capita always increase under any insurance system. The Majority Report registers approval of insurance but disapproves of insurance companies. The minority group agrees with the principle that, in any contract practice plan involving an insurance principle, this principle should be applied through a nonprofit organization. The minority group has not attempted to marshal all the facts or arguments that can be used against health insurance but has endeavored to show that there are great dangers and evils in insurance practice which must be set over against the advantages of distributing the costs of medical care by this method. The minority group believes that the majority report has minimized these dangers and evils.

The minority recommendations follow:

"I. The minority recommends that government competition in the practice of medicine be discontinued and that its activities be restricted (a) to the care of the indigent and of those patients with diseases which can be cared for only in governmental institutions; (b) to the promotion of public health; (c) to the support of the medical departments of the Army and Navy, Coast and Geodetic Survey, and other government services which cannot because of their nature or location be served by the general medical profession; and (d) to the care of veterans suffering from bona fide service-connected disabilities and diseases, except in the case of tuberculosis and nervous and mental diseases.

"II. The minority recommends that government care of the indigent be expanded with the ultimate object of relieving the medical profession of this burden.

"III. The minority joins with the Committee in recommending that the study, evaluation and coordination of medical service be considered important functions for every state and local community, that agencies be formed to exercise these functions, and that the coordination of rural with urban services receive special attention.

"IV. The minority recommends that united attempts be made to restore the general practitioner to the central place in medical practice.

"V. The minority recommends that the corporate practice of medicine, financed through intermediary agencies, be vigorously and persistently opposed as being economically wasteful, inimical to a continued and sustained high quality of medical care, or unfair exploitation of the medical profession.

"VI. The minority recommends that methods be given careful trial which can rightly be fitted into our present institutions and agencies without interfering with the fundamentals of medical practice.

"VII. The minority recommends the development by state or county medical societies of plans for medical care."

SAFEGUARDS IN DISTRIBUTION OF MEDICAL COSTS

This minority group agrees that any plan for the distribution of medical costs must have the following safeguards:

1. It must be under the control of the medical profession. (A "Grievance Board" to settle disputes, having lay representation, is permissible and desirable.)

2. It must guarantee not only nominal but actual free choice of physician.

3. It must include all, or a large majority of, the members of the county medical society.

4. The funds must be administered on a nonprofit basis.

5. It should provide for direct payment by the patient of a certain minimum amount, the common fund providing only that portion beyond the patient's means.

6. It should make adequate provision for community care of the indigent.

7. It must be entirely separate from any plan providing for cash benefits.

COUNTY SOCIETY PLANS FOR MEDICAL CARE

The minority group states its reasons for favoring thorough trial of the county society plan for furnishing complete medical care as follows:

1. It places responsibility for the medical care of the entire community on the organized physicians of the community.

2. It places medical care under the control of the organized profession instead of in the hands of lay corporations, insurance companies, and so on.

3. It places responsibility for the quality of service directly on the organized profession. It is in fact the only plan that guarantees quality of service and makes it the only basis of competition.

4. It removes the possibility of unethical competition because it includes all the physicians of the community and fixes a fee schedule.

5. Solicitation of patients, underbidding for contracts and other evils of the usual insurance plans are eliminated.

6. Freedom of choice of physician is assured and the essential personal relationship of physician and patient is thereby preserved.

7. It is the only plan that includes all classes, from the indigent to the wealthy.

8. It is adaptable to every locality, both urban and rural.

9. It provides for a minimum cost of administration by operating on a nonprofit basis.

10. It provides for payment, by every patient with income, of a certain minimum amount before the insurance is in operation. The minimum rises with the patient's income. This provision alone will operate to avoid many abuses in all other types of insurance practice.

11. It provides for means of certification of disability separate from the attending physician.

12. Cash benefits do not form a part of the plan.

SECOND MINORITY REPORT

The second minority report, which was signed by Herbert E. Phillips, D.D.S., and C. E. Rudolph, D.D.S., is in agreement with the first minority report in strongly emphasizing the necessity of maintaining professional standards and the position of the general practitioner. This group agrees with the first minority group that the majority is unduly critical of the professions. The second minority group joins with the first in declaring the medical center plan of the majority a utopian concept involving many problems too visionary or problematic to justify inclusion in an authoritative report of this kind.

The second minority group believe that the method of payment for medical service need not interfere with the highest professional standard or the close personal relations between practitioner and patient. Furthermore, this group is of the opinion that the introduction of compulsory health insurance under professional control would eliminate the objectionable features. It is in accord with the first minority group on the development by state or county medical society of plans for medical care.

The statements of Edgar Sydenstricker and Walton H. Hamilton are largely criticisms of the methods

used by the Committee. They are of the opinion that the preliminary studies and the recommendation do not deal adequately with the fundamental economic questions which the Committee was formed primarily to study and consider.—*Journal, American Medical Association*, December 3, 1932.

BILLS IN GENERAL ASSEMBLY

Senate Bill No. 11

Be it enacted by the General Assembly of the State of Missouri, as follows:

Sec. 1. That Sections 9013, 9014, 9019, 9020 and 9024, Article 1, Chapter 52, Revised Statutes of 1929, be and the same are hereby repealed and a new Section enacted in lieu thereof to be known as Sec. 9013, to read as follows:

Sec. 9013. The Governor, by and with the advice and consent of the Senate, shall appoint a Commissioner of Health, who shall hold his office for a term of four years, and who shall be in charge of the State Department of Health, which is hereby created. Said Commissioner of Health shall be a physician in good standing and of recognized professional and scientific knowledge and a graduate of a reputable medical school, and shall have been a resident of the State for at least five years next preceding his appointment, and in making such appointment there shall be no discrimination made against the different systems of medicine that are recognized as reputable by the laws of this State. The Commissioner of Health shall be subject to removal from office for cause by the Governor at his pleasure. The compensation of the Commissioner of Health shall be five thousand dollars (\$5000) per annum. He shall also receive traveling and other expenses necessarily incurred in the performance of his duties. The State Department of Health and the Commissioner of Health as hereby constituted shall assume all the rights, powers, privileges and duties heretofore conferred by law upon the State Board of Health, which board is hereby abolished, and the Secretary of State Board of Health and the Commissioner of Health heretofore authorized by law, which offices are hereby abolished. Where any law refers to the State Board of Health or to the Secretary of the State Board of Health or to the Commissioner of Health as heretofore constituted, same shall, after the passage of this Act, be construed as referring to and meaning the State Department of Health or the Commissioner of Health as hereby and herein constituted, as the case may be.

House Bill No. 26

Be it enacted by the General Assembly of the State of Missouri, as follows:

Section 1. That Section 9120 of Article 1, Chapter 53, Revised Statutes of Missouri, 1929, entitled, MEDICINE, SURGERY AND MIDWIFERY, and relating to the regulation of the practice of medicine be, and the same is hereby amended by inserting after the words, "criminal abortion" and before the word "or" in the sixteenth line thereof, the following words, "after conviction of the crime as provided in Section 3991," so that said section when so amended shall read as follows:

Section 9120. Authority of state board of health to issue or revoke licenses to practice medicine.—The board may refuse to license individuals of bad moral character, or persons guilty of unprofessional or dishonorable conduct, and they may revoke licenses, or other rights to practice, however derived, for like

causes, and in cases where the license has been granted upon false and fraudulent statements, after giving the accused an opportunity to be heard in his defense before the board as hereinafter provided. Habitual drunkenness, drug habit of excessive use of narcotics; or producing criminal abortion, after conviction of the crime as provided in Section 3991; or soliciting patronage by agents, shall be deemed unprofessional and dishonorable conduct within the meaning of this section. At least twenty days prior to the date set for any such hearing before the board for the revocation of such license, the secretary of the board shall cause written notice to be personally served upon the defendant in the manner prescribed for the serving of original writs in civil actions. Said notice shall contain an exact statement of the charges and the date and place set for the hearing before the board. If the party thus notified fails to appear, either in person or by counsel, at the time and place designated in said notice, the board shall, after receiving satisfactory evidence of the truth of the charges and the proper issuance and service of notice, revoke said license. If the licentiate appear either in person or by counsel, the board shall proceed with the hearing as herein provided. The board may receive and consider depositions and oral statements and shall cause stenographic reports of the oral testimony to be taken and transcribed, which, together with all other papers pertaining thereto, shall be preserved for two years. If a majority of the board are satisfied that the licentiate is guilty of any of the offenses charged, the license shall be revoked for such period of time as may be agreed upon. Any person whose license has been or shall be revoked by the board shall have the right to have the proceedings of said board revoking his license and all the evidence therein reviewed, on a writ of certiorari, by the circuit court of the county in which said board held its session when said license was revoked. Said writ shall issue upon the petition of the person whose license shall have been revoked to said court or to the clerk thereof in vacation at any time within ninety days after such revocation, and shall command the said board and the secretary thereof to certify to said court the record and proceedings of said board, and a complete transcript thereof, and of all the evidence therein pertaining to the revocation of said license. The petitioner for the writ of certiorari shall set forth the rights of the petitioner and the injuries complained of by him and shall be verified by him. If the proceedings of the board shall be sustained or upheld by the circuit court, its orders, decisions or judgments revoking said license shall remain and continue in full force and effect. And any such license so revoked by the board shall, pending said review on certiorari, stand revoked and so remain until the proceedings of the board relating thereto shall be quashed or otherwise annulled by the circuit court on said writ of certiorari. Testimony may be taken by deposition, to be used in evidence on the trial of such charges before the board in the same manner and under the same rules and practice as is now provided for the taking of depositions in civil cases.

PRIMARY ACTINOMYCOSIS OF STOMACH

A proved case of primary actinomycosis of the stomach with metastasis to the liver, reported by Alexander W. Blain, Detroit (*Journal A. M. A.*, Jan. 21, 1933), is apparently the second authentic case in the medical literature. A review of both the American and the European literature reveals no cases of primary gastric actinomycosis to have been reported in the United States and that in the six cases reported in the European literature only one survives strict diagnostic scrutiny.

TRUTH ABOUT MEDICINES

PROPAGANDA FOR REFORM

MISLEADING VAGUE CLAIMS SUCH AS "RECOMMENDED BY PHYSICIANS, MEDICAL AND HEALTH AUTHORITIES, NURSES, DIETITIANS, HOSPITALS, AND SANATORIUMS" AND EQUIVALENT STATEMENTS FOR SPECIFIC FOODS.—The Committee on Foods reports that vague claims of recommendation, approval or use by physicians, health or medical authorities, nurses, dietitians, hospitals and sanatoriums for specific foods and statements of similar import in food advertising are misinformative and convey misleading implications of unique nutritional or therapeutic values, or that these professions or institutions as bodies have specially investigated and passed scientific or professional judgment on the particular products which is not true to fact. Proper and correct explicit statements of special uses for or values of individual foods, or statements based on special studies by recognized authorities are permissible. (*Jour. A. M. A.*, October 8, 1932, p. 1263.)

CONVALESCENT SERUM IN THE TREATMENT OF POLIOMYELITIS.—The status of the treatment of preparalytic cases of acute poliomyelitis seems to require clarification. Although prevailing clinical opinions as to the efficiency of the treatment have been optimistic, few investigations have been adequately controlled. In two recent reports of controlled therapeutic tests, the evidence provided is not encouraging. Kramer, Aycock, Solomon and Thenebe record eighty-two cases about equally divided between those who received convalescent serum and those who did not. The Boston investigators concluded that their study offered no statistical evidence that convalescent serum is effective. Together with members of the poliomyelitis committee of the New York Academy of Medicine and his associates in the municipal hospitals, Park studied a total of 927 preparalytic cases of poliomyelitis, 519 of which were treated with convalescent serum; 408 patients were not given serum. The results of this study likewise do not afford statistical proof that the use of serum has any value in cases in which the cells of the central nervous system are already involved. The fact that the two controlled therapeutic tests gave similar results suggests that heretofore too much confidence has been placed in the treatment with convalescent serum. The need now is for additional evidence based on controlled studies which take into account the variants that make the problem complex. (*Jour. A. M. A.*, October 8, 1932, p. 1266.)

PROFESSOR PUCKNER AND THE COUNCIL ON PHARMACY AND CHEMISTRY.—The death of Prof. William A. Puckner on October 1, after more than twenty-six years of service as Secretary of the Council on Pharmacy and Chemistry, marked an epoch in the work of that body. In February, 1905, the Board of Trustees adopted a resolution creating the Council, and Professor Puckner took office as Secretary on March 1, 1906. It is interesting to realize that three of the members of the Council at its inception—namely, Drs. George H. Simmons, Torald Sollmann and Robert Hatcher—are still members of that body and that they with Professor Puckner were a vital force in its activities during its first quarter century. The Council has aided in the elimination of secrecy in medical prescription; it has discouraged misleading statements; it has standardized new preparations before their inclusion in the Pharmacopeia, and it has brought the medical profession of this country to a

better realization of scientific therapeutics than obtains anywhere else in the world. In its work the Council has had the approval of the majority of the medical profession, if not their constant cooperation. In 1909, shortly after taking over his duties as Secretary of the Council, the vision of Professor Puckner became so impaired that it was necessary for him to give up laboratory work entirely. Nevertheless, his memory was so remarkable, his grasp of affairs so embracing, and the force of his character so tenacious that he carried on his work efficiently almost to the day of his death. As Secretary of the Council he exercised a rare judicial attitude toward the problems that came before him, at the same time evidencing a scientific point of view in his evaluation of both laboratory and clinical evidence. The Board of Trustees will, at its next meeting, select a successor to the man who served as field marshal in the campaign for scientific therapy during the last twenty-five years. His position brought on him not infrequently bitter attacks and even the enmity of some of the commercial interests that considered themselves damaged by the Council's work. The next epoch in the career of the Council should have the cooperation from practicing physicians so complete as to indicate to manufacturers in the field of pharmacy the necessity for maintaining scientific standards if they wish medical support. (*Jour. A. M. A.*, October 15, 1932, p. 1354.)

BOOK REVIEWS

MENTAL DEFICIENCY DUE TO BIRTH INJURIES. By Edgar A. Doll, Ph.D., Director of Research, The Training School of Vineland; Winthrop M. Phelps, M.D., Professor of Orthopedic Surgery, Yale University School of Medicine, etc., and Ruth Taylor Melcher, M.A., Research Assistant, The Training School of Vineland. New York: The Macmillan Company. 1932. Price \$4.50.

This is a carefully classified list of the more common late results of birth injury, easily understood by general practitioners and nurses. It is rather timely on a subject that has been somewhat neglected.

W. C. G.

THE SPUTUM. Its Examination and Clinical Significance. By Randall Clifford, M.D., Associate in Medicine, Peter Bent Brigham Hospital; Assistant in Medicine, Harvard Medical School, etc. New York: The Macmillan Company. 1932. Price \$4.00.

The laboratory tests described are simple and sound. The correlation of the character of the sputum with the more common diseases of the respiratory system, taking up almost one half the book, will be of keen interest and good value to the doctor. These chapters are likewise clearly written and singularly free from clinical error. The index is complete and the bibliography is carried into the present year. One feels that if the book were gotten up in a cheaper form and sold at a popular price it would have the wider sale that it deserves.

L. S.

SYNOPSIS OF GYNECOLOGY. Based on the Textbook Diseases of Women. By Harry Sturgeon Crossen, M.D., F.A.C.S., Professor of Clinical Gynecology, Washington University Medical School, and Gynecologist in Chief to the Barnes Hospital and the Washington University Dispensary, etc., and Rob-

ert James Crossen, M.D., Instructor in Clinical Gynecology and Obstetrics, Washington University School of Medicine, etc. 110 illustrations. St. Louis: The C. V. Mosby Company. 1932. Price \$2.75.

It is utterly impossible for the medical man to study all the large expensive textbooks that now cover the many branches of medical knowledge. The man who does not intend to practice gynecology nevertheless must have a certain familiarity with the subject or he cannot call himself a well educated medical man. This little book has everything that appears in the large volume in a condensed but practical form. It is rather fascinating to recognize the completeness of his treatment of the subject. The book admirably fills its purpose. W. C. G.

CLINICAL GYNECOLOGY. By C. Jeff Miller, M.D., Professor of Gynecology, Tulane University School of Medicine; Chief of the Department of Gynecology of Touro Infirmary; Senior Visiting Surgeon, Charity Hospital, New Orleans. Illustrated. St. Louis: The C. V. Mosby Company. 1932. Price \$10.00.

This is an admirable and sincere piece of work. Although presented as a sequel to "An Introduction to Gynecology," alone, it can stand as a monument to the author's clinical and literary ability. Its practicability appears not only to the student for whom it was primarily written but also to those engaged in daily practice. It is a storehouse of first-hand experience.

The plan of the book is developed around its division into three parts. Part I is given to the general considerations of gynecologic diseases and indications of therapy; Part II is a catalogue with ample description of various therapeutic measures employed in gynecologic diseases, and, Part III is limited to operative technic and contains many high grade illustrations. A most usable index is included at the end.

The subject material is uniformly good, as would be expected from an author of such extensive personal experience. It is difficult to designate specific chapters as being outstanding. As practical therapists by necessity tend to become dogmatic, the author readily and concisely takes his position in matters of controversy and frankly outlines his treatment. His management of ectopic gestation, endometriomata and cervical cancer are striking illustrations of this point. For the same reason, he has adopted Gardner's classification of ovarian tumors.

It is most refreshing to find the work of contemporary gynecologists freely described and emphasized, but modern advances in a rapidly developing branch of medicine make it difficult to include all. For the sake of clarity the author has not considered space. For example, in Chapter XV, Part II, there is much repetition of Chapter VI, Part I, but such detail enhances the value of the book. The interpolation of heavy type in the running text serves for ready reference while italics are used for emphasis. References conveniently placed at the end of chapters are little less than a review of American gynecologic literature for the last decade.

Typographical errors are conspicuous by their absence, one outstanding one being in line 42, page 33, "hyperemic" is used for "hypodermic." As companion books "Clinical Gynecology" and "An Introduction to Gynecology" are destined to occupy a prominent place in medical literature for several decades. R. R. W.

DISEASES OF THE CORONARY ARTERIES (MYOCARDITIS).

By Don C. Sutton, M.S., M.D., Associate Professor of Medicine, Northwestern University, etc., and Harold Lueth, Ph.D., M.D., Formerly Instructor in Physiology, Northwestern University, Chicago. Illustrated. St. Louis: The C. V. Mosby Company. 1932. Price \$5.00.

The purpose of a book should be to impart or preserve knowledge or to provide interest or entertainment. If one considers a preservation of the experimental work of Sutton and his co-workers of value in abstract form then this volume has a place in medical literature; but there must be a legitimate doubt as to this value. If the purpose of this book was to impart knowledge, the method chosen was ill advised. The so-called "unbiased view" stressed by the authors in their preface and introduction is truly maintained, but so many conflicting statements of different experimenters are quoted that the casual reader is unable to evaluate the subject matter. It seems to the reviewer that instead of an "unbiased view," an honest attempt on the part of the authors to give their conclusions based on their familiarity with the general subject and their detailed study of the literature would have been of much greater value.

The book, as the title implies, treats of diseases of the coronary arteries or, more familiarly, with arteriosclerosis as it affects the heart, particularly the myocardium. The final chapter on "Treatment" is perhaps the best because it is the simplest and is evidently based on mature clinical judgment. The book is a curious mixture of elementary facts for the clinician and details for the experimentalist, especially the physiologist.

The historical background of disease of the coronary arteries is covered in detail and is interesting but confusing. The quotation from Heberden's (1768) description of angina pectoris before the College of Physicians of London was a happy thought, as was the authors' emphasis on fatigue and exhaustion as symptoms of cardiac failure. The illustrations, both original and the well-chosen copies, are splendid.

Unfortunately, the book is very difficult to read, though it must be said in all fairness that a second perusal brings out many facts entirely missed in the first reading which the reviewer believes to be due entirely to the confused method of presentation. The preface begins with a verse from Emerson to the effect that "Every book is a quotation." Would that this volume quoted less and analyzed and deduced more. A. E. S.

HOSPITALS AND CHILD HEALTH. Hospitals and Dispensaries. Convalescent Care Medical Social Service. Reports of the Subcommittees on Hospitals and Dispensaries, Clifford G. Grulee, M.D., Chairman Convalescent Care, Adrian V. S. Lambert, M.D., Chairman Medical Social Service, Ida M. Cannon, R.N., Chairman White House Conference on Child Health and Protection. New York: The Century Co. 1932. Price \$2.50.

The mass of facts which these subcommittees present in a constructively critical way provide the reader with a useful, assimilable survey of the subjects studied.

Dr. Grulee's committee on hospitals and dispensaries concludes that the laymen's responsibility of providing beds for the care of children has been adequately fulfilled. The medical profession, however, has not seen to it that the beds so provided are con-

trolled by pediatric staffs. Medical schools are to blame for this because they do not as yet assign a proportionate amount of time to pediatrics in their curricula. The hospital care of colored children in this country is woefully inadequate. Good roads have made distant hospitals available to children in rural communities. In neither general nor children's hospitals is there adequate provision for patients with mental and venereal diseases.

There is a tendency to recognize the need for special internships in pediatrics. There is also a tendency to put new-born babies in the care of the pediatric service immediately after birth. Trained social workers are essential to the proper conduct of a pediatric service. Only a small proportion of nurses receive proper training in pediatrics. Eighty-six hospitals for the isolation of contagious disease are entirely insufficient.

Every dispensary should have a separate pediatric department which should coordinate closely with the hospital and have a social service department. There is need for better dental care of children in hospitals and dispensaries.

Dr. Adrian V. S. Lambert's committee on convalescent care recommends that hospitals should either provide facilities for convalescent care or establish liaison with existing convalescent institutions. Facilities for convalescent negroes are entirely inadequate. Provisions for convalescent care of children recovering from contagious diseases need careful attention.

In a separate report, Dr. Henry D. Chapin describes the work of the Speedwell Society in providing boarding homes for convalescent infants and young children under proper medical supervision.

Miss Ida M. Cannon's committee on medical social service urges that measures be taken to increase the number of adequately prepared medical social workers. The needs for medical social service for patients in small hospitals should be studied and suggestions formulated for meeting these needs. Medical social workers should consider means by which they can promote more discriminating analysis of their accumulated experience.

Even a reviewer cannot suppress the hope that the facts brought to light by these committees will be acted upon, and that their recommendations will not languish in dusty pigeonholes.

This is hardly a book to overcome the sales resistance incidental to the present depression, but it is well to know that it is in the library of the medical society.
P. J. W.

MATERIA MEDICA, PHARMACOLOGY, THERAPEUTICS AND PRESCRIPTION WRITING. For Students and Practitioners. By Walter A. Bastedo, Ph.G., M.D., Sc.D. (Hon. Columbia), F.A.C.P., Assistant Clinical Professor of Medicine, Columbia University, etc. Third edition, reset. Philadelphia and London: W. B. Saunders Company. 1932. Price \$6.50.

The title indicates the scope of the book but cannot emphasize what is quickly apparent to the reader, viz., that while the materia medica and pharmacology are adequately presented these serve but as fitting introductions to therapeutics, which is the principal purpose of the book, at least to the physician whose chief interest lies in the clinical use of drugs in the treatment of the sick. Prescription writing is presented in an attractive manner so that one feels stimulated to follow its suggestions in an art susceptible of improvement among physicians generally. The medicine received by the patient is to him tangible evi-

dence of his doctor's efforts in his behalf and as such should be compounded from a prescription simply written according to generally accepted standards of therapeutic activity and pleasing both to the eye and taste. The author has presented one very good way of accomplishing these desirable ends.

Individual drugs are grouped clinically. Early the author considers under nutrients and vitamin furnishers, dextrose, viosterol, cod liver oil and yeast. He points out their therapeutic indications and explains in a practical way the standardization of the vitamins. It would be well for physicians to acquaint themselves with the solid facts about these remedies at a time when the laity is "health food conscious," and in this way aid what the Council on Foods and Drugs of the American Medical Association is doing with its published reports in the *Journal*. He takes up acids, bases, salts, buffer action, acidosis and alkalosis giving a very understandable explanation of the modern concepts of their action and effective use in a wide variety of medical and surgical conditions. Under cathartics he outlines different plans of treatment that should be followed in different forms of constipation. The author, long known especially as a contributor on the action and clinical use of digitalis, has given the modern viewpoint in his summary (page 243). The style is direct and pointed. One has the feeling as he reads that the author has traveled along the thorny path that leads to therapeutic wisdom. By introducing a short section on physiology before he considers drugs affecting the circulation and gastro-intestinal tract he has almost without being made aware of it, led one to the point where it seems only natural for one to be a physiological prescriber, the aim of all clinicians. A book like this should be on the desk of every practicing physician for daily reference in the art of successful prescribing. It is of value to the young doctor who has not found himself in therapeutics; and for the older practitioner it will prevent the "rut" by bringing to his attention new uses for old medicines along with the newer remedies. If physicians would make every case a therapeutic problem and frequently consult standard works on therapeutics they would soon be excellent prescribers and not be tempted into therapy, specious arguments for which so frequently come to their desks.
S. L.

RELATION OF ALKALOSIS TO PEPTIC ULCER

Henry A. Rafsky, Louis Schwartz and Alexander W. Kruger, New York (*Journal A. M. A.*, Nov. 5, 1932), administered excessive doses of alkalis to sixty-one patients with peptic ulcers, by a method in which initial small doses were followed by progressively larger doses until there ensued a complete cessation of the symptoms. The carbon dioxide combining power of the blood plasma and the blood chlorides did not reveal any evidence of alkalosis in any of these cases. Patients with renal disease and allergic persons were treated more cautiously by this method. Patients with pyloric obstruction and extreme degrees of gastric hypotonia were not treated by this plan. Two patients, who were treated according to the Sippy method, developed severe symptoms of alkalosis and showed definite biochemical changes. In order to minimize the danger of alkalosis resulting from excessive alkaline therapy, more attention should be directed to the method of administration as well as to the type of patient to receive this form of therapy.

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E. J. GOODWIN, M.D., Editor
1023 Missouri Building, St. Louis, Mo.
Telephone, Jefferson 5261.

PUBLICATION } J. C. B. DAVIS, M.D., Chairman
COMMITTEE } G. WILSE ROBINSON, M.D.
M. A. BLISS, M.D.

THE HEART IN THYROID DISEASE

A. MORRIS GINSBERG, M.D.

KANSAS CITY, MO.

It is a good practice to compare our present opinion regarding a medical problem with that held at a former stage of development of the same subject. Particularly is this important when the clinician has been able to study the problem in a more satisfactory manner, due to the many aids developed in recent years. In the last decade much has been written about the heart in hypothyroidism and hyperthyroidism and, I dare say, the next decade will still find it an important subject.

In 1873 Sir William Gull¹ described "cretinoid state supervening in adult life in women"; but it was William Ord² who named the disease, myxedema. This disease is essentially one of middle age and occurs more frequently in women than in men. The complaints are many and varied, for the disease affects all parts of the human anatomy. The well developed case presents the following findings: weakness; anemia; expressionless face; edema of the skin; chilly sensations; mental changes, such as slowness of thought and speech, lack of initiative, loss of memory, inability to concentrate; a rough, dry parchment-like skin with a yellow or brown pigmentation; a gain in weight despite a small appetite; the hair dry and falls out; the hearing impaired; lack of perspiration; subnormal temperature; slow pulse; hypotension, and a low basal metabolic rate. It is no wonder that Zondek,³ in 1918, felt that he had discovered a definite clinical entity which, until that time, had not been described, namely, the myxedema heart. He felt that it was characterized by a dilatation of the right and left ventricles, which might be marked; a sluggish heart action, with slow pulse and normal blood pressure; and by the absence of P and T waves in the electrocardiographic tracings. With thyroid medication there was a return of the heart to its normal

size; the heart had a livelier action with an increase in pulse rate but no decrease in blood pressure; and the P and T waves became normal. Fahr,⁴ in this country, agreed with Zondek and described a number of cases bearing out this contention. At about the same time, the Boston group of clinicians, Christian,⁵ Means and White,⁶ were rather emphatic on this subject. They felt that there existed no distinct clinical entity and that the myxedema heart in the sense of Zondek and Fahr is not a common occurrence.

As the question stands today, we do have a sluggish heart action; we do have a slow pulse, and we do have a low blood pressure in a myxedema patient. But these circulatory findings are just a part of the general lowered metabolism and naturally, when thyroid medication is instituted and the metabolism is elevated, the heart and the blood vessels too share in this increased metabolism.

The electrocardiographic findings which Zondek stresses we do find in advanced cases of myxedema and these show a return to normal after thyroid medication. They are probably due to an altered metabolism occasioned by the changed resistance of the skin. The experiments of Lueg,⁷ and Noble⁸ and his co-workers bear out this conclusion. In the usual manner of recording electrocardiographic tracings they found in cretins and myxedema patients the low P and T as has been described, but when needle electrodes were applied directly to the chest wall a normal tracing resulted.

In this connection, it is important to remember that myxedema predisposes to an increased sclerosis of the vascular tree, the coronary blood vessels, of course, participating in this pathological process. The resultant myocardial changes will therefore give abnormal electrocardiographic findings. It is on account of these coronary changes and the marked anemia which is usually present that clinicians who have studied this subject sound a warning note in regard to the promiscuous use of thyroid extract. We do not wish "to cure the myxedema, but

Read before the Kansas City Southwest Clinical Society, April 19, 1932.

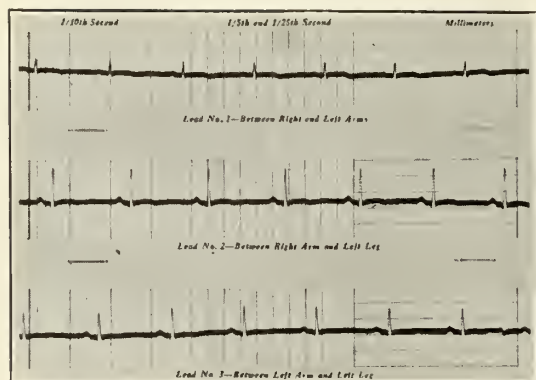


Fig. 1. J. K. Aged 43. Myxedema. B. M. R. — 40 per cent. Slow pulse and inverted T wave. Low E. M. F.

kill the patient by reason of circulatory failure." Many cases have been reported in the literature where too much thyroid (at times it was a small dose) has caused a definite angina pectoris. In other words, it is very important in treating these elderly myxedema patients with thyroid extract to employ small doses in order to observe the effect.

In 1786, Caleb Hillier Parry,⁹ a Bath physician, was the first to describe exophthalmic goiter with its associated heart symptoms. Osler often said that Parry should be given credit for having first clearly described exophthalmic goiter. It is indeed interesting to follow the historical development of our present conception of cardiac conditions of this disease. At first the opinion prevailed that the cardiac manifestations were due to a mechanical factor. It was Rose,¹⁰ in 1878, who emphasized the importance of the heart in sudden deaths of patients with goiter. In 1899, Kraus¹¹ suggested the toxic theory of exophthalmic goiter. As we come down to the present time, we find the pendulum is swinging to the opposite side. Many authorities today find no clinical evidence that thyrotoxicosis injures normal healthy hearts.

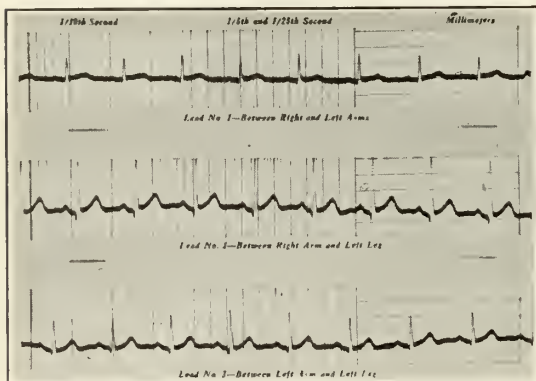


Fig. 2. J. K. T wave normal; 11 days of thyroid extract (50 grains). Service Dr. Ralph Major, Bell Memorial Hospital.

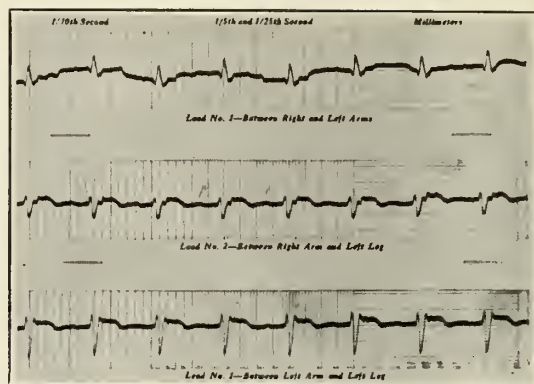


Fig. 3. F. H. Aged 53. Myxedema symptoms for 20 years. B. M. R. — 43 per cent. Defective intraventricular conduction. $\frac{1}{2}$ grain thyroid extract daily.

When we compare Kocher's¹² opinion that the surgeon should be guided by the cardiac condition in choosing the time and extent of the operation, and Mobius'¹³ idea that exophthalmic patients "suffer and die through their hearts," with our opinion today, we may see the change in thought regarding this matter, for we feel that no matter how severe the heart disturbance is it offers no contraindication to operation.

In its fully developed form the diagnosis of exophthalmic goiter is comparatively simple. It is, however, a different story when the disease is in a mild form or when it does not produce marked symptoms. The well developed case presents the following findings: goiter; exophthalmos; increased heat loss, such as increased sweating; peripheral dilatation shown by flushed skin and sensation of warmth; increased destruction of tissue as evidenced by the loss of weight and, as a compensatory mechanism, the increased appetite; increased circulation manifested by palpitation, dyspnea, tachycardia, increased pulse pressure, violent heart action, apparently enlarged heart, and the systolic mur-

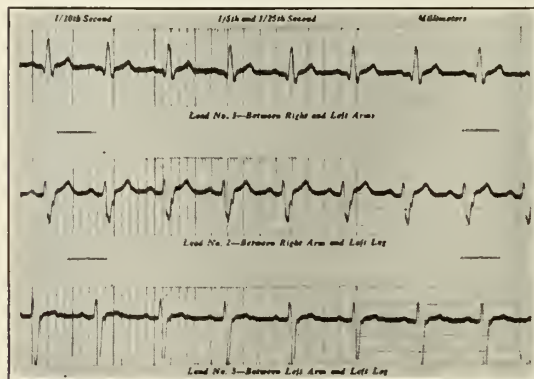


Fig. 4. F. H., 2 months later; defective intraventricular conduction. 1 grain thyroid extract daily causes definite angina pectoris.

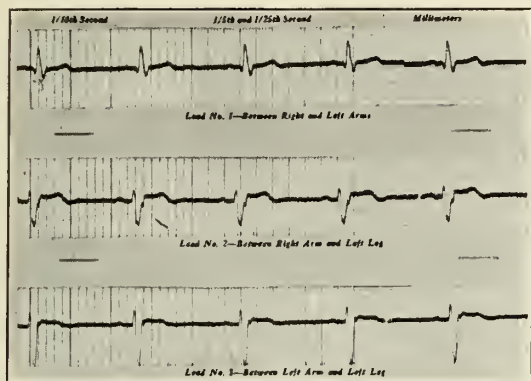


Fig. 5. F. H., 6 months later. Rate much slower. Still shows defective intraventricular conduction. Illustrates case with marked myocardial changes. Sluggish action and slow rate nature's protective measures.

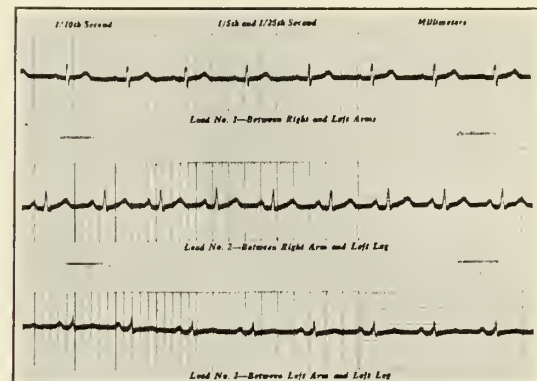


Fig. 7. N. B. B. M. R. plus 10 per cent. Rate 80. T wave normal. Lugol's solution, M. 10, t. i. d. for 3 weeks.

murs; the increased irritability of the central nervous system as shown by extreme restlessness, amounting to ceaseless motion; the marked mental excitation; diarrhea; amenorrhea; the slight fever; the decreased sugar tolerance, and the increased basal metabolic rate.

With the exception of the physiological changes in the cardiovascular tree due to age, there is very little difference in the cardiac disturbances between the exophthalmic goiter patient and the toxic adenoma patient. Probably the first symptom which these patients have is palpitation or a consciousness of heart action, usually brought on by mental or physical exertion of a mild nature. The sensation of pounding in the chest will naturally unnerve an already highly nervous patient. Sometimes, there are attacks of palpitation of a paroxysmal nature and it is then that we suspect an irregularity. These patients soon notice undue breathlessness or fatigue on the least exertion. Not long thereafter this dyspnea becomes more marked. The patient flushes freely and spasmodically on account of the great liability of the vasomotor system. A common complaint is the throbbing in

the neck and a sense of tightness or constriction. Quite often distress over the precordia or a fullness in the chest may send the patient hurriedly to the doctor. This distress or fullness, even called pain by some, is not severe. There is no radiation of this discomfort and usually it is designated as being in the region of the apex or toward the anterior axillary line.

Upon inspection, we see increased carotid pulsation and flushing of the face and neck. The skin of the face, neck and upper chest has a salmon hue, hyperemic and somewhat pigmented. The peripheral vessels may show increased pulsation. Capillary pulsations are frequently noted. Looking at the precordia, we note a forceful apex impulse which gradually increases its power and, as time goes on, the apex beat becomes diffuse and can be noted moving downward and outward. This is also noted by palpation. Palpation reveals a rapid pulse, soft and at times dicrotic; it might even be somewhat of a water hammer pulse. Tachycardia is always

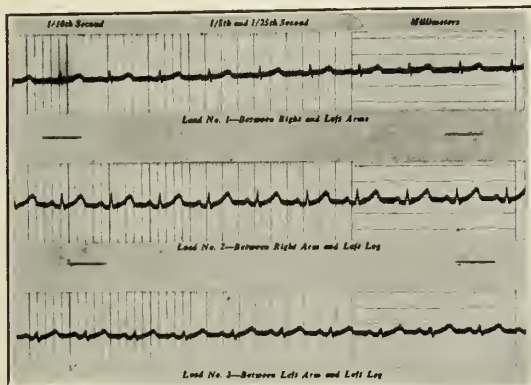


Fig. 6. N. B. B. M. R. plus 27 per cent. Rate 100. High T wave.

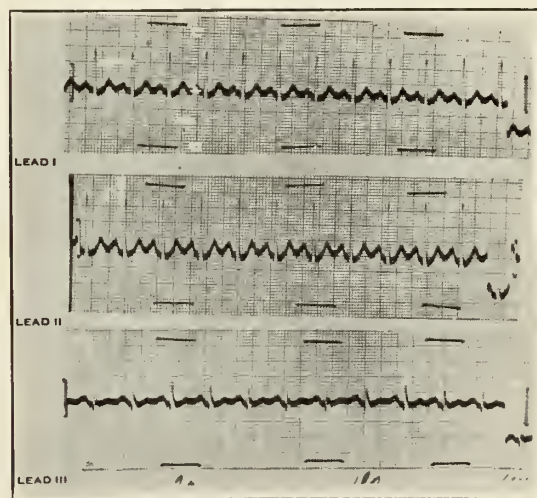


Fig. 8. B. B. B. M. R. plus 32 per cent. Hypertension. Rate 120. High T wave.

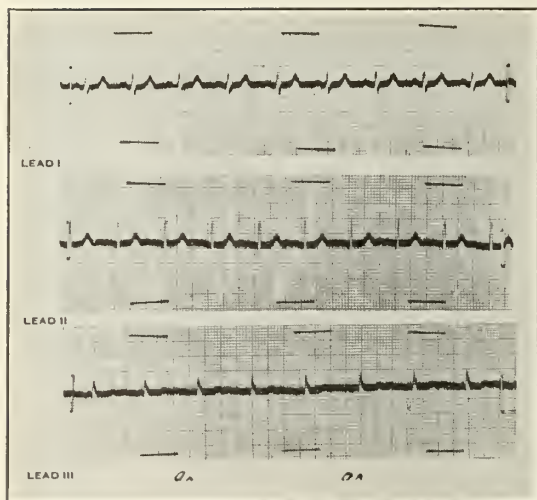


Fig. 9. B. B., 10 days after thyroidectomy. B. M. R. — 4 per cent. Rate 90. T wave normal.

present. The rate varies tremendously from day to day. A patient showing a persistent tachycardia, temporary or permanent, should always be thought of as at least a possible thyroid. Allow me to call your attention to certain characteristics of this tachycardia: it is constant with bed rest; it is not influenced by drugs or narcotics; it disappears promptly after thyroidectomy. Quite often we are led to believe that we are feeling a systolic or even a presystolic thrill at the mitral area. At the pulmonic area we may feel a distinct shock due to the violent closure of the pulmonic valve. When the heart is percussed, we get a definite increase of the relative dullness downward and outward; later, the right border dullness is increased. Often the base shows an increased dullness. Auscultation reveals a whistling sound, a bruit over the carotids and their branches, particularly over the thyroid arteries. A so-called "pistol shot" may be heard over the brachials and femorals.

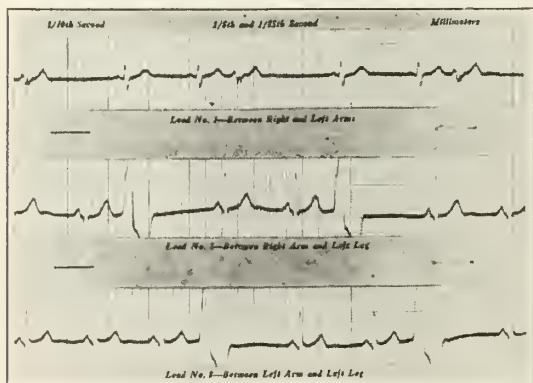


Fig. 10. C. D. B. M. R. plus 47 per cent. Ectopic beats. High T wave. Courtesy Dr. E. H. Hashinger. (High T wave a clue to hyperthyroidism.)

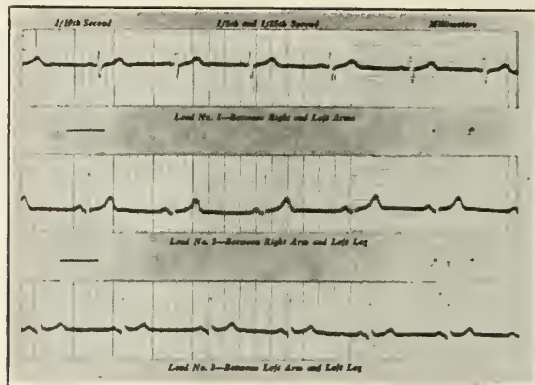


Fig. 11. C. D., 4 weeks Lugol's solution, 30 drops daily. B. M. R. plus 11 per cent. Normal rhythm.

The sounds of the heart are loud, especially the first sound. Often two types of murmurs are heard; both are systolic in time and blowing in quality. One is best heard at the third left intercostal space and is localized. The second is best heard at the apex and has a variable transmission. It is thought that the first is probably due to changes in the blood flow, while the apical murmur is probably due to functional regurgitation at the mitral valve due to dilatation of the left ventricle. Improvement or cure of hyperthyroidism results in the disappearance of these. It must be remembered that in hyperthyroidism we never hear diastolic murmurs unless there is an associated heart lesion, and this of course might be present. The blood pressure readings are interesting. In exophthalmic goiter the patient shows a diastolic about 70 while the toxic adenomatous patient shows a diastolic of 80 or more. A good axiom is that it is rare to find a diastolic over 90 in exophthalmic goiter while in toxic adenoma it is not unusual to get readings over 100. The systolic blood pressure shows a higher figure for toxic adenoma.

Auricular fibrillation is the most common cardiac irregularity associated with hyper-

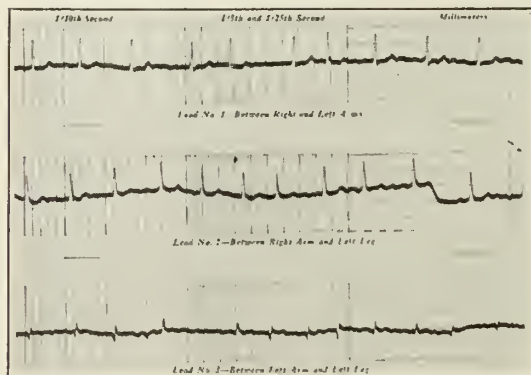


Fig. 12. G. D. B. M. R. plus 38 per cent. Auricular fibrillation 1 year.

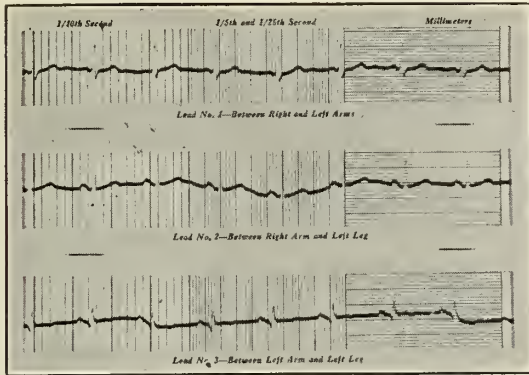


Fig. 13. G. D. B. M. R. plus 2 per cent after thyroidectomy and quinidine therapy. Normal rhythm.

thyroidism and usually disappears if thyroidectomy is performed early in the disease. Very few patients with hyperthyroidism over the age of fifty fail to show auricular fibrillation. The duration of the increased metabolic rate is most important in regard to the development of auricular fibrillation. Extrasystoles or ectopic beats are commonly found in these patients. As high a figure as 15 per cent has been reported by some clinicians. Often thyroidectomy and iodine medication remove these abnormal contractions. Paroxysmal tachycardia is not a common disorder in thyroid disease, occurring in about 1 per cent of cases.

Hoffman¹⁴ in 1914 was the first to describe the T waves in the electrocardiographic tracings of patients with exophthalmic goiter. Krumbhaar¹⁵ described an "unusually prominent T wave in most cases of toxic goiter which, in about one half of the cases, was markedly and persistently diminished after operation." Furthermore, he states that a diphasic or inverted T wave, especially in leads 1 and 2, offers an unfavorable prognosis. Willius, Boothby and Wilson¹⁶ do not comment on the height of the T wave except to call attention to the infrequency (1 per cent) of inversion of the T wave. This infrequency is due to the fact that degenerative changes in the myocardium are not common in hyperthyroidism. Hamburger¹⁷ and his co-workers report several cases in their series having a high T wave which showed a definite lowering of the height when the thyroid was removed. Previous rest without iodine has no effect but with iodine a lowering of the T wave in most cases is noted. They, however, found no uniformity in the increased height and concluded that it had little if any relation to pulse rate. It is well to remember in this connection that Rothberger and Winterberg found a high T wave in patients having a marked accelerator tone.

The association of hyperthyroidism and

angina pectoris is rare. It is easy to overlook angina pectoris in the presence of severe hyperthyroidism, or mild hyperthyroidism in a patient with angina pectoris. A heart having a sufficient coronary supply under ordinary circumstances may be inadequate to meet the demands placed upon it by the added work of the heart produced by hyperthyroidism.

Recently we have read many articles regarding cases of so-called "masked hyperthyroidism." These patients are middle aged individuals who do not present the classical picture of hyperthyroidism but show a group of symptoms which, if analyzed, will place them in the hyperthyroid field. They have a staring expression of the eyes, an increased warmth, redness or pigmentation of the skin, increased restlessness and unexplained loss of weight. They come to the doctor with a complaint in one of the main systems and, under iodine medication or thyroidectomy, they improve or get completely well. This group must be kept in mind as its ranks are increasing due to the added stress and strain which men and women over forty-five are now experiencing.

All of us have seen cases of hyperthyroidism which give no history of previous heart involvement and which still have symptoms of heart failure. Hurxthal¹⁹ studied 500 cases and came to the conclusion that the average age of congestive heart failure was above forty with a large percentage showing previous cardiovascular disease. He feels that "thyrotoxicosis has a specific excitatory effect on the heart and that this, more than the demands for increased work, produces fatigue in the heart, weakened by the degenerative process of age." In his opinion, the most significant causes of congestive heart failure in hyperthyroidism are age and its accompanying cardiovascular changes, the specific heart drive, auricular fibrillation and the duration and intensity of thyroid activity. Andrus²⁰ feels that when congestive heart failure appears under forty there must be a "pre-existent rheumatic or more rarely a syphilitic heart disease." If you will review your own cases, you will be struck by the fact that the majority of these congestive heart failure patients were older individuals who for many years had adenomatous thyroids with secondary hyperthyroidism. These patients usually give a history of many exacerbations and remissions.

724 Argyle Building.

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PEDIATRIC SURGERY

LLOYD B. CLINTON, M.D.

CARTHAGE, MO.

Many years ago some one said, "Nature is a great physician but a poor surgeon." In thinking over the truth of this remark I have come to the conclusion that it is more correctly applicable to the ills of infancy and childhood than to those of adult life. It is in infancy that we see the pitiable congenital errors of nature, the defects, the deformities, coupled with the apparent lack of constitutional protective reaction as compared to the time-worn resistant inevitable pathology of the adult. The tissues of infants and children are virgin soil and the happy hunting ground of bacteria of all types. We observe the recruit of the service in the lifetime battle against disease, accident and environment, as in contrast to the veteran who has been seasoned, immunized, battered and wounded in this campaign from infancy to senility. Growing out of this thought I wish to discuss a few of the outstanding and vital encounters in which the etiology, the symptoms, diagnosis and treatment of these surgical problems of childhood differ to some extent from those of the adult.

There has developed in the past lean years a rather universal turn from ultraspecialization to generalization in many phases of the practice of surgery. In the surgery of children, however,

one often observes that surgeons with wide operative experience on the adult approach surgical procedures on children with little or no comprehension of the fundamentally different problems involved for discriminative operations upon the infant and child. To me, therefore, it seems worth while to emphasize the great importance of studying pediatric surgery before attempting operative procedures, with the dream that in the future surgeons will give special attention and preparation for work in this field.

Medical and surgical cooperation in pediatrics has recently been stressed by Stulik,¹ who finds that such cooperation increases diagnostic ability in such borderline cases as lower or central pneumonia, diaphragmatic pleurisy, appendicitis, diverticulitis and abdominal adenitis. The advantages of this cooperation are, first, the patient becomes a better surgical risk; second, the surgeon obtains better results and third, the pediatrician improves his diagnostic and therapeutic acumen. But not all of us have trained specialists with whom to counsel, so the responsibility will often rest upon the surgeon himself who must at once become an expert in the problem at hand, be it otolaryngologic, plastic, traumatic or orthopedic. It is to these problems that I wish to call your attention.

In general, there are two factors which cause laymen to feel that no operation should be performed on a very young child. One factor is that it is difficult to do a thorough operation because of the small space in which the surgeon has to work, as in tonsil operations, and, second, it is a common belief of the laity that an anesthetic is very dangerous to young patients.² In very young infants there is a definite cycle of development of the lymphoid tissue with a tendency to rapid growth in the first few years of life. The removal of tonsils in these young infants is frequently criticised because of the number of so-called recurrences. I once recorded one hundred children between the ages of two and four years who had enormously hypertrophied tonsils and adenoids. Eighty-one of this group were observed three years later and found that in only about 16 per cent had it become necessary to remove the tonsils or was it apparently indicated clinically. Nevertheless, if the tonsils and adenoids are impairing the child's health and development they should of course be removed regardless of age.

Infection of the mastoid in infancy is often a vexing problem. Marcus³ has pointed out that this condition is often found with the absence of otorrhea in early life. An infant of about one year of age presented the following salient features: One week prior to admission he became fretful, developed mild coryza, which

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lasted for a brief time, with loss of appetite and slight rise in temperature. The following day the tympanum was moderately injected. Paracentesis was done the next day with no drainage following, and at no time was there any aural discharge. Meningismus was noticeable a few days later and spinal puncture revealed clear fluid under pressure. Laboratory examinations disclosed nothing of importance. At this time antrotomy was performed, disregarding the constant absence of otorrhea, which revealed free pus and was followed by an uneventful recovery.

Johnston⁴ has stated that the necessity for repeated incisions in the drum of infants generally indicates the opening of the mastoids. He reports twenty-one mastoid operations on children ranging from ten weeks to eighteen months of age with two deaths. In about 50 per cent of the cases symptoms of gastro-intestinal disturbances were predominant.

Otitis media is perhaps the most frequent and important complication of the acute infections of the respiratory tract in infancy and childhood, a most frequent and urgent cause of fever and fretfulness and deserves to be diagnosed early and accurately. Even otitis neonatorum is occasionally present as a cause of crying and a rise of temperature in the first few days of life.⁵ Prompt paracentesis in the serous stage is sound surgically, gives relief of symptoms and the best promise for rapid and uncomplicated recovery.

How many times have we overlooked a retropharyngeal abscess until the little patient was practically in extremis? A rather recent case came to my service having had three weeks of intense fever and all the signs of meningeal irritation, which had been subjected to three spinal punctures. Finally, through a spontaneous rupture while vomiting, the patient recovered in spite of the prognosis and the treatment she had received.

Considering the many tumbles and traumata that infants and children receive, serious head injury is really quite rare. Contusions and fractures of the skull occur usually after the first year. The course and treatment are essentially the same as in adults. However, there is a condition occasionally encountered which is only seen in children—that is a traumatic pseudomeningocele; and to its occurrence it is necessary that the injury to the cranium cause a tear in the dura as well as a fracture or fissure of bone. The appearance of cerebrospinal fluid between the fragments of bone and scalp follows in a few hours or days. I have on several occasions seen a gradually forming, pulsating, fluctuating tumor develop, more or less filled

with fluid and covered with normal skin. It does not contain meninges or brain substance although, exceptionally, traumatic encephaloceles have been reported. The treatment is not very promising. Puncture does not induce healing and sometimes makes the condition worse; and if the patients survive, the use of a protective cap or a bone plastic operation would be the only attempted treatment. Taken as a whole, skull fractures in children give a much better prognosis than in adults. The high temperature after fracture of the skull is not very serious and the high pulse rate is not a particularly unfavorable sign in this injury when it occurs in the younger patient.⁶

To the operator who has experienced good results in the correction of clefts of the palate and defects of the lips comes a rare happiness. I believe the saddened humility of the mothers of these unfortunates is unparalleled. It is with these cases that the previously mentioned co-operation with the pediatrician is most needed. Many quite satisfactory surgical maneuvers technically and geometrically accurate have been lost in their effectiveness due to poor judgment in the selection of the time of operation, the preoperative preparation and the postoperative care and feeding. Professor Kirchner of Tübingen has devised a practical method of holding these tiny patients.⁷ They often easily free themselves from the usual restraints and must be bound securely during the operation. His method permits a perfect restraint at the same time giving the operator an opportunity of maintaining a convenient position for his work. The child is first wrapped in a sheet and bound to the top of an instrument table with wide bandages; this table should be adjustable in its transverse axis, such as an old type bedside table. In prolonged anesthesia or in very weak infants warm water bottles may be enclosed in the bandages which hold the child securely to the table.

Empyema is met with in children perhaps more often than in adults. Cohen⁸ reports that of 123 cases, 63 occurred in the first four years of life. Radical surgical operation while the acute pneumonic process is still present should never be attempted. I think the closed method of drainage should always be tried in those cases of empyema which do not clear up with simple aspiration. In the great majority of cases in infancy and childhood the closed method will work successfully. But there are cases in which aspiration has been employed in the acute stage and then the closed method instituted for some time, yet the temperature persists and the child does not seem to gain ground, in fact is losing. In short, there comes a time when one should

resort to a rib resection in these cases and not delay too long. About three-fourths of such cases can be done under local anesthesia, except in the very nervous child where a light gas or ether will be necessitated. One point important in children in the after drainage is to keep the involved side down in order that the embarrassed respiration may not cause mediastinal deviation from pressure and cause cardiac failure due to the structural weakness of the chest. Simple intercostal incision with open drainage is preferred in the very sick and young infants. Ladd and Cutler⁹ showed a mortality of 28 per cent in 268 cases treated by closed methods alone with 50 per cent reoperated upon. Then in 226 cases of rib resection gave only 15.9 per cent mortality and only 4 per cent secondary operations.

And now let us consider the abdominal region as it is the field for perhaps the most frequent surgical problems of infancy. The abdominal conditions most commonly met with in children are acute appendicitis, intestinal obstruction, subphrenic abscess, inflammation of Meckel's diverticulum, peritonitis, pelvic abscess and rupture of some abdominal or pelvic organ due to trauma. In these little patients the time element is often a very important one, says Anderson, and a delay of a few hours may mean the difference between a normal and easy convalescence and recovery and death or a stormy protracted recovery. For this reason we believe the first and essential thing is to determine whether or not we are dealing with a surgical condition within the abdomen and, if so, to proceed at once with surgical intervention even though we are unable to state definitely the exact diagnosis.

Infections in the peritoneal cavity in early infancy do not always give the well-known sign of spasm or muscle defense when pyogenic in nature and are therefore misleading. The organisms found in the peritoneal cavity in young infants are in the main four, i. e., streptococcus, pneumococcus, *B. coli* and *B. tuberculosis*. Peritonitis is always secondary to infection elsewhere and is carried to the peritoneum by direct extension, as in omphalitis or vaginitis, rupture of some part of the gastro-intestinal tract or by the blood stream in a septicemia or overwhelming tuberculosis.

Pneumococcic peritonitis, first described by Bizzolo in 1885, is essentially a disease of childhood and most common between the fifth and tenth years with 75 per cent of the subjects females. In young infants it is a complication of pneumococcic infection elsewhere, usually the lungs, most often originating in the nasopharynx. When the infection accompanies septic-

mia or pneumonia the peritonitis may be entirely masked and it is in just this type of case that the greatest care must be exercised. In the differentiation, appendicitis must be carefully considered in which the local signs of pain, rigidity, etc., are intense and the general symptoms are relatively insignificant. Whereas, in the pneumococcic peritonitis, there are symptoms of grave intoxication while the abdomen may remain quite supple and free from pain. As to time for operation, to temporize is often to allow an appendicitis full sway, although some surgeons object to early operation due to the lack of localization and incident high mortality. I have held to early operation and shall continue to do so as long as the results are equally gratifying with delay. Obadalek reports since 1920 he has seen 50 cases of pneumococcic peritonitis in children at his clinic in Bruenn. Of these 47 were operated upon immediately with 37 cures and 10 deaths. Although statistics often show that the mortality decreases with the duration of the disease Obadalek could not decide to give up early operation.¹⁰

My experience with acute suppurative appendicitis in the first few years of life is very much in accord with the usual reports. Porter and Carter¹¹ state that while this condition occurs very rarely in the first two years of life, cases are reported as early as the first month. This early manifestation of acute appendicitis is most difficult of diagnosis due to the common occurrence of abdominal pain, vomiting and low degrees of fever in infancy. Only the most careful observation, abdominal palpation and laboratory aids will make it possible. We cannot help but feel that much of the blame for this early manifestation can be placed on embryologic and mechanical causes. According to Ashoff, appendicitis in childhood is usually due to bacteria from the intestine. The parts physiologically or pathologically narrowed are most readily affected. Because of the incomplete development of the lymphatic filter and the mesentery and because of the slight resistance of the peritoneum, encapsulation rarely occurs until late, if at all, and the younger the child the greater the danger. It seems also reasonable to presume that many of the unexplainable temperatures, the frequent gastro-intestinal upsets in infancy, may result in acute inflammatory changes in the delicate tissue of the small bowel and cecum. This process may subside in the ileum and colon but the infantile appendix, through faulty development, inadequate circulation or embryologic defects, remains the seat of an active pathologic change which subsequently manifests itself as a clinical entity. This may perhaps explain the fact that cases of active ap-

pendicitis are so seldom seen before rupture. An experienced mother or nurse administers the cathartic, applies the hot water bottle before the physician is deemed necessary. Hence the criticised term chronic appendicitis can seldom be brought into use in infancy as the young patient does not resist its first attack as a rule and either comes to early operation or drifts into a state of general peritonitis following the inevitable rupture. Werthmann¹² reports a seven months old female child with an acute gangrenous appendicitis of apparently only a few hours' duration. However, these tiny patients show phenomenal recuperative power if given an opportunity. In one recent case I watched a fifteen months old babe sit up in bed during his entire postoperative course thus enhancing drainage and localization to a complete recovery in spite of the severity of the onset. And, in passing, let us remember the cases of lower pneumonia in children with referred abdominal pain that have been mistaken for acute appendicitis. Here the thorough history, the chest examination, laboratory and physical findings, should always guide us aright. Thus, in borderline or doubtful cases it behooves us to remember that only through a most careful study, bringing into play every weapon at our disposal, will an early diagnosis be made and through prompt drainage a recovery be secured.

In considering the obstructions and atresias of infants of six weeks or under, we find that pyloric stenosis is the easiest to diagnose. The history, the peristalsis, the possible tumor and the gradually developing starvation stools clinch the situation.¹³ Ladd reported a mortality in nearly 200 cases of pyloric stenosis of 5.5 per cent following surgical treatment, whereas Holt's figures from Babies Hospital, New York, ten years previously, showed 17.4 per cent.¹⁴ On the other hand, intussusception is said to be the chief cause of intestinal obstruction in children under five years of age. As a causative agent we recognize excessive mobility of the cecum and ascending colon with a narrowing of the bowel at the site of the intussusception as at the ileocecal valve, intestinal polyps, hypertrophied Peyer's patches and the irritability of the bowel following enteritis or vigorous catharsis. Only a few years ago, the mortality of these cases was placed at 37 per cent, even when the little patients had an early operation in the first twenty-four hours. If the case is irreducible or is allowed to persist for three or four days the mortality may reach 70 per cent. A technic in the handling of these cases must be developed to shorten the operative time but care should be taken to use one of the various methods of treatment after reduction which is

most likely to prevent a recurrence. O. F. Lamson of Seattle¹⁵ has devised a simple method when the intussusception has occurred at the cecum of suturing the ileum with four or five sutures so that there remains an outfolding of the ileum on the cecum. This should be very effective in preventing reinvasion. The success of the surgical treatment of intussusception is entirely dependent upon early diagnosis, prompt operation and the prevention of recurrence. These factors are becoming generally recognized with the result that today the mortality rate is constantly falling.

In hernia in the new-born and infants we have a problem that is distinctly at variance with that of adults. The common occurrence of a protruding hernia of the umbilicus apparently has no bearing on the manner of the care of the cord at birth. These hernias are best treated by taping which brings about a cure in about 95 per cent of the cases. I have seen these new-born umbilical hernias operated on under one week in a large clinic abroad in spite of the many infections that follow and the poor results obtained. Direct inguinal and femoral hernias are distinctly rare in childhood and the diagnosis is unreliable. Oblique inguinal hernias are quite common, especially in boy babies. The anatomy and pathology are not unlike that in adults, but the end results are quite different when we remember that approximately 95 per cent of these hernias occurring in the first year result in a spontaneous or nonoperative cure. I have also seen these infants operated on in the first ten days of life with infection frequently following and resulting in a far more serious condition than the original defect. The simple wool truss is quite efficient as a support until sufficient time has elapsed to justify doubt of a spontaneous cure at which time surgical repair is indicated.

To enter into a complete discussion of the problems of genito-urinary surgery of infants and children would consume too much time in this general paper. A brief outline of a few conditions wherein outstanding problems are encountered should suffice. The time-worn topic of circumcision deserves mention. Let us confine this operation to those cases with a positive indication, be it ritualistic or pathologic. I have recently been consulted in two cases of circumcisional death from hemorrhage—one a markedly jaundiced seven-day old child, the other two days old, the child of a known bleeder. Thus we see that the urge to circumcise may oftentimes cloud our better judgment. Hypospadias, epispadias, congenital bladder deformities and undescended testicles often must be repaired early in infancy. Renal and ureteral

calculi are by no means rare in early life. A babe of eight months in the California Children's Hospital recently passed three renal stones. I had a case of ureteral stone in a girl of six years which apparently was the cause of periodic or cyclic vomiting and pain that had lasted five years. She was relieved when the stone was removed. The traumatic surgery of the genito-urinary tract brings us into such problems as orchitis at birth, hydrocele, ruptured bladder, ruptured urethra, and even fracture of the kidneys. A lad of eleven years, after an apparently slight fall on his back, sustained not only a laceration of the omentum with peritoneal bloody extravasation, but a complete fracture of the right kidney necessitating nephrectomy. After transfusions he made an uneventful recovery.

And this brings us to a brief consideration of traumatic injuries of the abdomen and extremities. The friability of the liver, spleen and kidneys renders them susceptible to rupture in the most unexpected instances. Unexplained deaths following falls and trauma of childhood can frequently be proved at autopsy as due to these causes. The signs of internal hemorrhage, shock and abdominal rigidity should lead us to instant investigation and only prompt surgical intervention will secure a recovery. In these cases children withstand our surgical attack with greater fortitude than do adults. For example, the removal of the spleen or a kidney in a child gives a far better chance of ultimate compensation and good health than in an adult. In 167 cases in children on whom splenectomy was done for splenic anemia and Banti's syndrome, 16, or 19.6 per cent, died in the hospital but 80 per cent of the survivors are known to be living at this time, according to Pemberton.¹⁶ Although many of the subsequent deaths were not attributable to the disease, it is of interest to note that more than a third were directly due to hemorrhage.

To go into the problems of orthopedics would consume more than the allotted time. The congenital defects—club foot, club hands, anomalous musculature and dislocations—require detailed consideration. Pyogenic and tuberculous osteomyelitis are often overlooked until long after surgical treatment would be effective. Many cases of so-called rheumatism later prove to be active osteitis of some description. Children make such patient subjects that they lend themselves most admirably to the prolonged treatment so necessary to good results in bone work. Likewise, the general growth and development properly supervised give the surgeon most needed cooperation. The remark is frequently made in discussing the prognosis of a

serious fracture in a young person, that the youth of the patient is in his favor, or that the resultant deformity will be outgrown; but how much more desirable is a good result in a fracture or other orthopedic lesion in the child with a possible lifetime of usefulness before it than in a senile patient for whom life is but a memory.

CONCLUSION

From this hasty summary of a few of the problems of the pediatric surgeon we discern that upon us rests a great responsibility, that the judgment required is many times more complicated in youthful than in older persons, that the variety of cases includes all specialties and demands the closest cooperation with the child internist, but that as a reward we may oftentimes expect spectacular recoveries with a lifetime of subsequent health for our patients which will repay us for our endeavors.

First National Bank Building.

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DISCUSSION

DR. SAM H. SNIDER, Kansas City: I want to say a word about surgery in empyema in children and in the adult. The impulse is to drain immediately, but we must remember that in draining empyema immediately after its onset we drain the entire pleural cavity because adhesions have not formed. We compress the lung, and if we further reduce the vitality of the patient by massive pneumothorax we may so insult his physiology that he dies. Whereas, if we do not drain the empyema immediately but aspirate and keep the pus removed for several days, then adhesions form above the empyema and we have a localized empyema. If we then drain the localized empyema the closure is more readily obtained, the patient is in better physical condition and sustains the

operation much better. We learned this lesson during the war when we had many cases of influenza complicated by empyema.

In ordinary empyema in children and in adults the method is early aspiration and late open drainage. In tuberculous empyema never drain. I have drained three tuberculous empyemas and have regretted the operation in each case. The treatment is aspiration and the use of oil of gomenol which has markedly lessened the mortality. When we learn to use oil of gomenol properly it may relieve ordinary pus-forming empyema.

DR. IRL BROWN KRAUSE, Jefferson City: I am impressed with this excellent paper. Never have I read or heard discussed a paper by this title. The author, who was formerly active in pediatrics and later in surgery, is most certainly capable of presenting this subject. The hazards of surgery in the infant and the preschool age child are increased not only because of the expected complications but because of the frequency of contagious diseases.

It is well to remember that in addition to attempting recovery the child is a growing developing individual requiring increased activity on the part of the child patient. Naturally, more careful consideration and support through adequate after-care must be given to this age group.

Ear complications are frequent in childhood. Consideration of the anatomical variations in childhood versus the adult must always be remembered in pediatric surgery. The frequency of childhood tuberculosis is worthy of note as well as the frequency of hemorrhage. We fear hemorrhage and for this reason do not recommend circumcision in the first few days of life. We prefer waiting until the child is six to eight weeks of age.

In surgery of childhood as well as in the other phases of child care it is to the advantage of parents to consult the family physician early in the illness thereby enabling him to institute the necessary corrective measures before the resistance of the child is too greatly disturbed.

RELATIONSHIP OF THYROID DISEASE TO CHRONIC NONSPECIFIC ARTHRITIS

Wallace S. Duncan, Cleveland (*Journal A. M. A.*, Oct. 8, 1932), calls attention to the fact that considerable divergence of opinion exists as to the etiology of the chronic nonspecific arthritis that occurs in thyrotoxicosis. It would appear that the abnormalities of the joints are not due to a specific toxin elaborated by the thyroid gland. Whether or not the individual in the presence of hyperthyroidism becomes sensitized to infection, which in a large proportion of instances has been found to be present, is a moot question. It would appear logical to believe that such periarticular changes are the result of trophic disturbances initiated by the hyperactive thyroid gland through the vegetative nervous system. In conclusion, the author states that divergent manifestations of thyroid dysfunction are productive of articular disturbances that can be looked on as being characteristic of those altered physiologic states. Hyperthyroidism is accompanied by capsular and periarticular changes which, if inadequately treated, lead to an atrophic polyarthritis with characteristic contractures. These changes are highly amenable to well directed surgical measures on the thyroid. Articular manifestations of hypothyroidism are degenerative, are slowly progressive and are readily lessened in severity by the administration of thyroid extract in adequate dosage.

LYMPHOGRANULOMA INGUINALE (CLIMATIC BUBO)

REPORT OF CASE

GEORGE IVES, M.D.

AND

SAMUEL D. KATZ, M.D.

ST. LOUIS

Lymphogranuloma inguinale has until recently been rarely recognized in the United States. To our knowledge this report is the first one of a case recognized west of the Mississippi River. Our interest in the subject was initiated by the report of DeWolf and Van Cleve¹ working with Dr. H. N. Cole at Cleveland, Ohio. They reported 58 cases as determined by the Frei test 31 of which showed active manifestations of the disease; the remaining 27 had inguinal adenitis or an anorectal syndrome, according to their past histories.

The disease was first described as a clinical entity in the nineteenth century. There is no doubt that some of the early writers included cases of adenitis of the inguinal nodes, but these bear no relation to lymphogranuloma inguinale. Conversely, many cases of this disease have without doubt been reported as other diseases of the inguinal nodes.

Confusion as to the diagnosis and nature of the disease is in part probably due to the similarity in name to other conditions, viz., lymphogranulomatosis (Hodgkin's disease) and to granuloma inguinale. The latter is an ulcerative disease of the skin and subcutaneous tissue. Excepting for the similarity in names these diseases stand out as distinct entities. Another source of confusion has been the variety of names attributed to this condition. A partial list would include: Lymphogranuloma inguinale; lymphogranulomatosis inguinalis; subacute inguinal lymphogranulomatosis; subacute inguinal poradenitis; subacute inguinal periadenitis; subacute inguinal lymphadenitis; non-tuberculous granulomatous lymphadenitis (Hansmann²); climatic bubo; tropical bubo; adenitis tropicalis; nonvenereal bubo; fourth venereal disease; venereal granuloma; hypertrophic bubo; strumous bubo of the groin; Nicolas-Favre disease; lymphopathia venereum.

The last name has recently been proposed by Wolf and Sulzberger³ and by Sulzberger and Wise.⁴ Criticism may be offered against every name which has been proposed. Since the disease does not always involve the inguinal nodes, any name which includes the word inguinal is

¹Read before the St. Louis Medical Society, November 22, 1932.

²From the Clinical Laboratory of the Missouri Baptist Hospital and the Dr. George Ives' Clinical Laboratory.

inappropriate. Most of the names reflect a misconception of the disease, or indicate a false implication as to its nature.

Hansmann² in 1924 proposed to name this disease "nontuberculous granulomatous lymphadenitis." This name expresses no misconception but is objectionable because it describes negatively instead of positively and because the name may apply to other granulomas of the lymph nodes. Names implying the venereal origin of the disease appear to be improper for the same reason that syphilis and gonorrhea should not always be designated as venereal. Although a large proportion of these cases are thought to be venereal it is probable that the number of nonvenereal cases will materially increase when the protean manifestations of this disease become generally known. Although lymphogranuloma inguinale is more frequently observed in summer months than at other seasons climate is not a determining or etiological factor. Hence, "climatic bubo" is an inappropriate name. "Tropical bubo," as a name, is almost as inappropriate as the name "tropical dysentery."

The disease has been known for many years in the tropics and subtropics the world over, but it is apparently most common in the West Indies and most frequently observed in the white population. Natives for some unknown reason are apparently relatively immune. Sailors seem to furnish the majority of the cases and naval surgeons have had the most extensive clinical experience with the disease. This disease has been recognized in several European countries and many cases have been observed since the late World War. It has been an extremely rare disease in this country, if we may judge by the number of reported cases.

United States naval surgeons have reported a number of cases. The most notable reports are by Whitmore⁵ who in 1927 reported 11 cases seen in the Pensacola Naval Hospital in a period of five years, and by Wilmoth⁶ who in 1928 reported 27 cases from the Marine Hospital of Baltimore. These patients were service men who apparently obtained their infections in other countries. Other than for statistical purposes, these reported cases do not concern us directly in a discussion of this disease in the American population. It is, however, probable that the reported cases in this country had their origin, or were transmitted, from cases such as those reported above.

The other reported cases in this country are as follows: Hansmann² in 1924 reported 4 cases from Boston under the original name of "nontuberculous granulomatous lymphadenitis." In two of these cases we believe tularemia and pos-

sibly sporotrichosis should be considered. In 1927, Barber and Coogle⁷ reported 5 cases in Mississippi. Hillsman and associates⁸ reported one case with autopsy findings from New Haven, Conn. Wolf and Sulzberger³ in the present year reported one case from New York. DeWolf and Van Cleve,¹ as noted previously, reported 58 cases from Cleveland. There have been no cases reported west of the Mississippi River.

CASE REPORT

Mr. S., aged 24, musician, complained of a swelling in the right groin which started October 10, 1931. His attention was drawn to the swelling while moving a piano. The swelling gradually increased in size with little discomfort for a period of four weeks. His family physician incised the swelling and the patient remained in bed. Eight days later he entered the Missouri Baptist Hospital under the care of Dr. H. M. Moore. The patient complained of general malaise, night sweats and a loss of twenty pounds of weight. He denied venereal exposure and denied that there was a genital sore previous to the adenopathy. He said pus was obtained when the mass was incised and that there was drainage until the day previous to his admission into the hospital. The mass increased in size after drainage.

The mass was described as a large inguinal abscess. No genital sore was found, no scar was noted. Wassermann and Kline tests negative; agglutination test for tularemia negative. Patient had a moderate increase in temperature of a remittent type previous to hospital admission and for two weeks postoperatively.

Dr. Moore excised the mass and the patient left the hospital December 20, 1931, one month after the operation. Healing was apparently slow for a small sinus persisted until August, 1932.

The surgical specimen was received in the laboratory November 19, 1931, but the true nature of the disease was not diagnosed until prompted by the article by the Cleveland authors. Guinea pig inoculation of the drainage material from the wound was negative for tubercle bacilli. Frozen sections of the enlarged mass of inguinal lymph nodes were made. Microscopic examination showed numerous small abscesses in which polymorphonuclear cells predominated. Pyknotic nuclei and mononuclear cells were occasionally seen. The abscesses varied in size and shape. The abscess represented in figure 1 measured 1 by 2.5 mm.



Fig. 1. Lenticular shaped granuloma with abscess in center.

Some were elongated (lenticular, figure 1), while others assumed a stellate appearance (figure 2). Surrounding the purulent center epithelioid cells much like those seen in tuberculosis were noted. They had a palisade arrangement. The lesion appeared much like a secondarily infected tuberculous lymphadenitis. Our impression at the time was that it was a granulomatous lymphadenitis of undetermined etiology. The possibility of the secondarily infected granulomas of a nature other than that of tuberculosis was also considered.

CLINICAL AND PATHOLOGICAL PICTURE

The disease has generally been accepted to be of venereal origin. It has been noted in conjunction with syphilis, gonorrhea and chancroid as well as with scabies. Cases have been described with involvement of lymph nodes other than those of the inguinal chain. Some of these cases are certainly not of venereal origin. A report by Lujan and Rotter⁹ indicates that the disease may be acquired by contact with infected vectors. Surgeons have been inoculated accidentally during operations on such cases.

One of the features of this disease that remained a mystery until Frei's contribution in 1925 was its relative frequency in males and females, 7 to 1.¹⁰ It has recently been discovered that the disease is as frequent in the female as in the male. The manifestations of the disease usually differ in the sexes. In the male the virus is deposited on the penis in almost all cases and is carried to the inguinal lymph nodes. The inguinal nodes in the female are involved only if the virus is deposited upon the external genitalia which are drained by those nodes. However, frequently the site of the inoculation is internal, presumably on the cervix or vaginal wall. In such cases the virus is carried to the perirectal lymph nodes and there produces a series of rectal lesions which until recently were never attributed to this disease but erroneously, in most instances, charged to the account of syphilis (Fournier's syphilo-

ma) and sometimes to tuberculosis and gonorrhea. We are led to believe by Frei¹¹ and by Barthels and Biberstein¹² that rectal fistulae are a common early manifestation of the disease in the female. Later, scarring may produce high rectal stricture. This complication is more likely to occur in the Negress. The destruction of the perirectal lymph nodes and the scarring resulting therefrom lead to lymph stasis producing the clinical condition known as "ulcus chronicum elephantasticum vulvae et ani" (esthiomene). In the male the possible late sequel is chronic elephantiasis of the penis and scrotum. It has been reported that the latter sequelae are more likely to occur after excision of the nodes than after other forms of treatment, hence Stitt¹³ has advised against excision as a method of treatment.

The primary lesion (lymphogranulomatous chancre), which is said to occur within two weeks following exposure, is of fleeting character. In most instances the lesion is unobserved and the disease first attracts the patient's attention by a swelling in the inguinal region which causes very little discomfort. This swelling usually begins 10 days to 6 weeks following exposure. The disease progresses slowly, new adjacent nodes become involved and they become adherent to the skin because of the periadenitis. The skin becomes tense and assumes a purplish discoloration. Softening of the nodes occurs due to breaking down of the nodes with the formation of multiple abscesses. These do not have a marked tendency to coalesce. If these abscesses are not incised and drained fistulae form spontaneously from which creamy pus and later serosanguinous fluid exudes. Not infrequently the iliac lymph nodes are involved.

Pathological changes in the lymph nodes vary with the duration of the disease. Within the same chain, nodes showing various changes may be noted. Those recently involved show a diffuse inflammatory process indistinguishable from other lesions. For the development of characteristic lesions a period of days or weeks must elapse. The nodes are filled with numerous small abscesses containing pus cells and mononuclear cells. The most characteristic lesions are the star and lenticular shaped abscesses. Before development of these abscesses, typical granulomas are formed in which epithelioid and occasionally giant cells may be noted. The necrosis occurs in the center of these epithelioid granulomas resulting in intraglandular abscesses which are surrounded by varying thicknesses of epithelioid-like cells arranged in palisade formation.

Constitutional symptoms occur in this disease

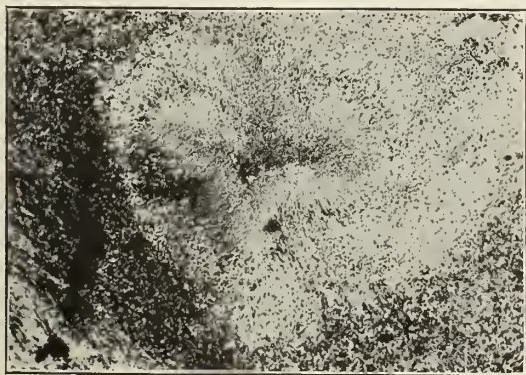


Fig. 2. Star shaped granuloma with central abscess. Abscess is small and epithelioid cells arranged in palisade formation producing a stellate lesion.

in part depending upon the extensiveness of the process or upon secondary infection. Weakness, anorexia, mild anemia, loss of weight, general malaise and an intermittent fever occur. In our case, the patient was bedridden for one week previous to hospital admission. As a rule, the blood shows a mild leukocytosis with a slight mononucleosis.

Recent writers have promulgated the hypothesis that this disease might produce systemic pathology, notably that of the central nervous system. Further work along this line might reveal that other conditions attributed to other diseases might show the etiology to be due to that which produces lymphogranuloma inguinale.

DIAGNOSIS

Elimination of lymphadenopathy due to syphilis, tuberculosis, chancroid, neoplasms, Hodgkin's disease and blood dyscrasias can usually be done with little difficulty: The chancroidal bubo might cause some confusion but the fact that the adenitis leads to early suppuration with the formation of a single large abscess should eliminate it in many instances. In addition, the nature of the primary lesion in chancroidal infections will aid in its elimination.

The Frei test,¹⁴ to which we have referred, has greatly broadened our conception of lymphogranuloma inguinale and has stimulated the present attention which this disease is enjoying. It was discovered in 1925 and has greatly simplified the diagnosis and research of this disease. It is a skin sensitization test. The antigen is diluted sterilized pus from an uncontaminated lymph node. It is applied by intradermal injection. The test is apparently extremely reliable although it may be modified by the presence of other diseases, notably syphilis. It has been suggested that there are two distinct groups of this disease,¹⁵ since patients are sometimes non-sensitive to one antigen though sensitive to the antigen of their own group. Therefore it is desirable to have available more than one antigen to test the doubtful cases.

ETIOLOGY

No cultural organism has been shown to be the cause of lymphogranuloma inguinale although a number of organisms have been reported to be its cause. Autoinoculation experiments have given negative results. Inoculations into monkeys, and possibly into guinea pigs, rabbits and mice have been successful. Inoculations into monkeys have been by intracerebral and prepuccial routes. Tissue emulsions and cerebrospinal fluid from infected monkeys have given positive reactions in patients suffering

from the disease when injected intravenously. The disease has been produced in man by inoculation with material from an infected monkey.¹⁶ Material passed through Berkefeld and Chamberlin filters has produced the disease in monkeys, hence the most plausible theory is that the etiological agent is a filterable virus. The virus is destroyed rapidly at 60° C., but can be preserved for days at low temperatures. It is destroyed by antiseptics excepting dilute solutions of formaldehyde.

PROGNOSIS

Death due to this infection is rare. There are no statistics available by which we can determine the real mortality. The sequelae are serious and are more important from the standpoint of morbidity and mortality than the active disease. Research workers in this disease think it possible that the morbidity is greater than we at the present time appreciate. Death, in most cases of active disease, is due to a long continued secondary infection with suppuration. There is a marked tendency to spontaneous recovery from the infection and because of this fact evaluation of the proficiency of any treatment is impossible.

TREATMENT

Many drugs have been used both locally and systemically in this disease. One per cent antimony and potassium tartrate solution has been used intravenously in doses ranging from 5 to 10 c.c. with a few good results. Extirpation of the inguinal nodes as well as multiple punctures into the numerous abscesses with filiform drainage have given variable results. Excision of the glands may produce lymph stasis. Roentgen ray treatments¹ in the early stages have been recommended. In the female, involvement of the perirectal nodes may be treated with antimony and potassium tartrate, but we know of no good proof that it is efficient in such cases.

Recently, vaccines prepared from infected monkey tissues¹⁷ have been used in graded doses and a favorable result in the outcome of the disease when started early is reported. This vaccine produces a systemic reaction in patients suffering from the disease and has also been used as an aid in diagnosis. Previously, vaccines made from pus obtained from human subjects had been reported as favorably influencing the disease.

It is possible that vaccine therapy will prove to be the therapeutic agent of choice. This treatment is, however, still in the experimental stage. It is improbable that it will benefit the late manifestations of the disease most commonly seen in the perirectal lesions. When the proper treat-

ment is known it will be imperative to diagnose and treat the cases early in order to prevent the serious sequelae.

SUMMARY AND CONCLUSIONS

A case of lymphogranuloma inguinale (climatic bubo) occurring in a native of Missouri is reported. We believe the disease to be prevalent in the United States, as in European countries, and that the manifestations and sequelae of this disease have been attributed to other causes. The disease is a distinct clinical entity and produces a characteristic pathological picture in the tissue involved.

301 Beaumont Medical Building.

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THE SURGEON'S RESPONSIBILITY

According to Grover C. Penberthy, Detroit (*Journal A. M. A.*, Oct. 8, 1932), the surgeon treating the injured has a great responsibility in assisting with the readjustment of this group for work. The close cooperation and the interest of the employer are vital. The employer through the medical department assumes a paternal responsibility to the injured employee that must be shaken off as the constructive phase of the treatment nears an end. This is necessary to eliminate the possibility of the development of a neurosis on the injury basis. Any injury may lead to neurotic complications, but the greatest number develop with injuries to the back and spine; therefore, it is imperative that thorough studies be made to minimize the complications that may obstruct readjustment to work. The disabled can be reclassified for work through rehabilitation and vocational training, and it should be the responsibility of the surgeon to guide properly this group to this end.

SURGICAL REST AND COMPRESSION FOR PULMONARY TUBERCULOSIS

A RESUMÉ OF THE RATIONALE, INDICATIONS AND RESULTS

EARL C. PADGETT, M.D.

KANSAS CITY, MO.

Thus far in this century one of the most important advances made by surgery has been the demonstration of the possibilities of proper operative management in certain types of pulmonary tuberculosis.

Pulmonary tuberculosis takes its high toll chiefly because of the incessant respiratory movement. Surgery aids principally in overcoming certain obstacles to successful medical treatment. By the helping hand of surgery medical treatment can gain the upper hand in the battle. Beneficial therapeutic results are in direct proportion to the degree of rest and, when cavitation is present, to the completeness of the collapse or relaxation. However, the balance between the tendency of the lesion to heal and the tendency to progress may be such that even partial fulfillment of ideal conditions may be sufficient aid for nature to heal the lesion.

When sufficient relaxation or compression is accomplished the secretions are largely forced out of the cavities and the circulation, which is agitated by respiratory movement, is slowed so that less of the toxin laden lymph is thrown into the circulation, as was shown by Dock and Harrison¹ and Kuma.² Dolley and Weise³ and Gardner⁴ have shown that collapse of pulmonary tissue causes a lymph stasis which is thought to stimulate fibrosis. This is exactly nature's method of healing tissue diseased by tubercle bacilli. The lessened amount of toxin laden lymph thrown into the general circulation decreases the constitutional reaction and also lessens the likelihood of lymph borne tubercle bacilli being carried to new situations in the lung. Cough with the concomitant fatigue is decreased when the irritating secretions of the cavities are lessened by their collapse and consequently the likelihood of "shower" implantation of tubercle bacilli in other bronchi is lessened. The importance of secondary infection of the tuberculous cavities in preventing healing has been emphasized by Ochsner.⁵ Cavity collapse tends to control secondary infection. As a result of the whole on collapsing pul-

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From the Department of Surgery, University of Kansas School of Medicine.

monary tissue diseased by tuberculosis, the general condition of the patient often quite suddenly improves.

If one grants that pneumothorax does not in the strictest sense fall in the category of surgical collapse, there remain two strictly surgical procedures now commonly practiced; namely, phrenicectomy and extrapleural thoracoplasty on which one may base a discussion of the rationale, indications and results of surgical collapse. The other and rarer surgical procedures, such as scaleni section, intercostal neurectomy and pneumolysis, depend upon similar principles but time does not permit a discussion of the relative degree of rest or collapse obtained by these less commonly practiced operations.

DIAPHRAGMATIC PARALYSIS IN PULMONARY TUBERCULOSIS

Diaphragmatic paralysis was suggested in 1911 by Steurtz⁶ and performed by Sauerbruch⁷ in 1913. The anatomical variations of the phrenic nerve were emphasized by Walther⁸ in 1914 and Felix⁹ in 1922 so that constant results are now obtainable by either the radical resection of the nerve performed by Goetz¹⁰ or exeresis of the nerve performed by Felix⁹ in 1922. Sections of the fibers of the phrenic nerve cause flaccidity of the diaphragmatic muscular leaf and the intra-abdominal pressure forces the diaphragm up into the chest cavity, provided mechanical structures such as adhesions and pleural thickening do not prevent. Furthermore, as muscular atrophy continues, there is a tendency for the diaphragmatic leaf to rise still higher in the chest.

A brief review of some of the work done in attempting to estimate the immediate effects of the operation is interesting. Felix⁹ found the paralyzed hemidiaphragm to rise on an average of 7.65 cm. on the left and 5.9 cm. on the right, in inspiration. On expiration on the left it rose 5.9 cm. and 2.09 cm. on the right. Berard¹¹ estimated the volume of the hemithorax is reduced from one quarter to one half. Brunner¹² estimated that a right lung of 2400 c.c. volume is diminished from 400 to 800 c.c.; that is, from one sixth to one third of its volume. Kochs¹³ found a decrease in vital capacity equal to that of pneumothorax which remains constant, whereas in cases with artificial pneumothorax the vital capacity approached its normal value a few days after intrapleural filling. It might be assumed that diminution of volume to this extent would cause dyspnea, but such is not the case as a much greater reduction occurs in pneumonia without causing any shortness of breath. Bi-

lateral phrenicectomy operations have been performed without causing any noteworthy disturbances. (Jehn¹⁴ and Sauerbruch.¹⁵)

INDICATIONS FOR DIAPHRAGMATIC PARALYSIS

Phrenicectomy is used as an independent procedure in a growing number of situations; but, because it produces only partial rest and relaxation of a diseased lung, the operation is most commonly indicated as a complement to other procedures. Thus, phrenicectomy is frequently employed together with artificial pneumothorax and thoracoplasty or even with scaleni section and intercostal neurectomy.

As an independent procedure the most usual indications for phrenicectomy are: (a) to supplement sanatorium treatment in more or less acute cases of tuberculosis, mainly unilateral, when pneumothorax is prevented by adhesions; (b) to assist in controlling the disease in more extensive or more advanced chronic tuberculosis when pneumothorax cannot be done on account of adhesions and thoracoplasty is contraindicated on account of the poor general condition of the patient or because the opposite lung is too greatly damaged; (c) to supplement sanatorium treatment in early cases of unilateral tuberculosis when simple rest does not seem to be succeeding; (d) to assist in controlling the disease in definite basal tuberculosis; (e) to relieve specific symptoms, sometimes without expecting a cure, such as an embarrassed heart action by certain types of adhesions or pain, cough or vomiting due to diaphragmatic adhesions, or to control hiccoughs and in selected cases to control hemoptysis.

Most of the conditions in which complementary phrenicectomy may be indicated can be placed in two rather diverse groups. In the first group the procedure is used as an accessory to artificial pneumothorax under the following conditions: (a) to supplement incomplete pneumothorax after incomplete collapse because of basal or lateral adhesions; (b) to check a pleural effusion; (c) to aid in retaining in position a collapsed lung which is expanding under a pleural effusion, and in cases which already have a satisfactory pneumothorax; (d) to increase the periods of refills; (e) to diminish the size of a hemithorax cavity when it is desired to discontinue pneumothorax; (f) to take the place of a pneumothorax for social or economic reasons. In this second group the operation is used in conjunction with extrapleural thoracoplasty: (a) as a preliminary to the procedure; (b) to assist in improving the condition of a very ill patient so as to warrant thoracoplasty; (c) to test the better

lung for relighting a questionable or healed lesion to activity; (d) to increase the amount of compression gained by thoracoplasty; (e) as a complement to partial thoracoplasty; (f) to decrease the size of a tuberculous empyema cavity preliminary to closure by thoracoplasty or to prevent the development of catarrhal signs in the lower lobe.

RESULTS OF PHRENICECTOMY USED INDEPENDENTLY

Among favorable results reported after the operation as an independent procedure are those of Thomasen,¹⁶ who reports results in 131 cases followed-up for from one to four years; 57 of the cases were of the productive or fibroid type. In 60 per cent of the cases good results were obtained and the patients were back at work. In some there had been cavities as large as a goose egg. In 12 cases the lesions were of the exudative or soft type but none of these lived. Sachs¹⁷ and Wirth and Von Jaski¹⁸ report equally good results in cases in which phrenicectomy was used alone. Matson¹⁹ reports that in 34 cases of productive tuberculosis, predominately unilateral, wherein thoracoplasty was contraindicated because of active disease in the contralateral lung, 52 per cent were much improved and 38 per cent were improved. The improvement in the 52 per cent rated as "much improved" was so marked that a thoracoplasty became unnecessary. All these patients made clinical recoveries.

Cavities undoubtedly play an important role in the prognosis of pulmonary tuberculosis. The healing of the primary disease is also undoubtedly influenced by the secondary infection that is coincident with cavitation. As cavities decrease in size, the amount of sputum and the number of tubercle bacilli decrease. Werner and O'Brien²⁰ in a comparative study of 100 cases receiving only routine sanatorium care and 100 cases which had phrenicectomy made the following report:

All cases had cavities 3 cm. or larger in diameter. Of the 100 cases receiving no surgical care only 14 obtained spontaneous closure; 25 decreased in size, 61 increased in size, and in no case did the sputum become negative. Of the other 100 cases in which phrenicectomy was performed, in 36 cases phrenicectomy plus rest in bed was the only treatment used; 24 of the 36 cases had thin walled cavities and 12 had early infiltration and moth-eaten areas. Of the group of 24 cases the cavities closed in 16, in 6 they contracted somewhat and in 2 they grew larger. In the group of 12 cases all cavities closed. Of the 64 remaining cases which had phrenicectomy pneumothorax had failed in 9 cases; in 23 cases a partial pneumothorax was present but it appeared that certain adhesions might be released; in 30 cases the operation was preliminary to thoraco-

plasty and in 2 cases the operation was performed preliminary to allowing a lung to reexpand. Taking the group of 100 cases which had phrenicectomy performed as a whole, in 49 per cent the cavities closed, in 35 per cent the cavities decreased in size, in 7 per cent the cavities increased and in 45.8 per cent the sputum became free of tubercle bacilli. These results of phrenicectomy in cavitation are quite encouraging.

Davies²¹ in 47 phrenicectomies, used independently, reached the following conclusions: (a) In basal tuberculosis the operation is unquestionably of immense assistance in arresting the disease. (b) In generalized disease, but mainly unilateral, some improvement may be expected in about 50 per cent of the cases. (c) Frequently the operation will give complete relief of distressing symptoms due to irritation of the muscle of the diaphragm or to drag upon the pericardium or mediastinum.

PHRENICECTOMY AS A COMPLEMENTARY PROCEDURE

But as phrenicectomy is in the main a complementary procedure with rather diverse indications, its success or failure should be adjudged by the degree of fulfillment of the surgeon's expectations. In many cases the ultimate

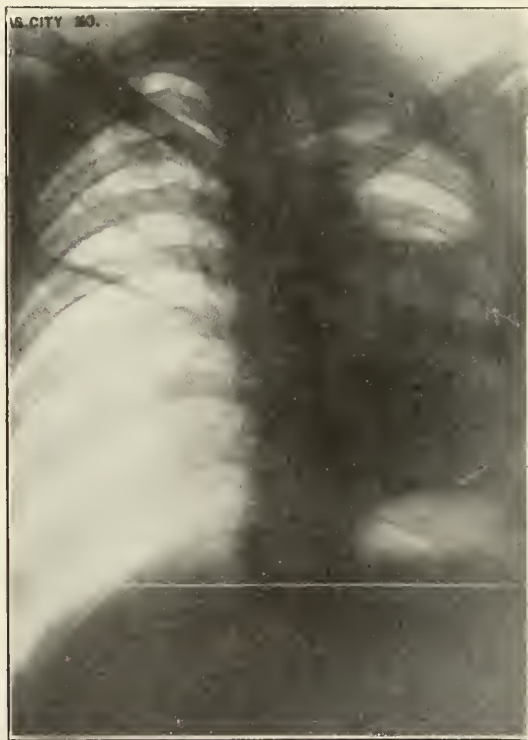


Fig. 1. Roentgenogram (August 16, 1929) of chest shortly after left-sided phrenicectomy. Note elevation of diaphragm on left, infiltration in lower chest, large cavity size of a tennis ball or larger in left upper lobe and smaller cavity with arrow pointing toward it. Smaller cavity closed after hemidiaphragmatic paralysis but larger cavity not much affected.

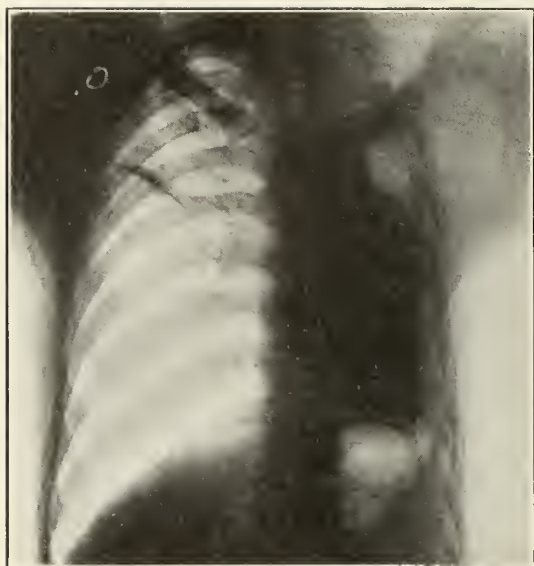


Fig. 2. Beginning April 20, 1930, a two-stage paravertebral thoracoplasty performed. Roentgenogram, taken September 11, 1930, shows two thirds of larger cavity closed. In October, 1930, after some spitting of blood, did a parasternal anterior costectomy of the 2nd, 3rd and 4th ribs. (See figure 3.)

outcome of the disease is quite a different question. Moore²² analyzed 63 cases from this viewpoint and came to the conclusion that in three out of four operations, the expectations of the surgeon will be met provided the indications are carefully borne in mind in the selection of the cases. Davies in 58 cases in which the operation was used as a complementary procedure concluded that (a) as an accessory to incomplete pneumothorax considerable benefit may be expected, particularly when the base of the lung is adherent to the diaphragm, in a large percentage of cases; (b) the refill interval after pneumothorax is increased by phrenicectomy; (c) phrenicectomy should always be performed before allowing a lung long collapsed to reexpand, and (d) phrenicectomy should always be performed preliminary to thoracoplasty. As to the later conclusion he argues that, if for no other reason, on some occasions the result of the minor operation is so beneficial that the thoracoplasty becomes unnecessary.

DISCUSSION OF INDICATIONS

The indications for phrenicectomy are fairly definite but undoubtedly the operation is being used too routinely and consequently without benefit. Often it is used where sound knowledge of the pathology and the physiology of the chest would lead one to expect no benefit. For instance, Sauerbruch,⁷ with his great experience and sound judgment, believes the

operation is of no great value when used alone and should be used in conjunction with other surgical procedure. And Peters,²³ who has had considerable experience with tuberculosis and the various operations for collapse, voices his skepticism by stating that phrenicectomy is effective only in basal lesions and as a preliminary to thoracoplasty.

An important factor which has often been discussed is, just how the compression is redistributed in the chest. Some men, as Sergeant and Baumgartner²⁴ and Peters,²³ have insisted that the principal effect of phrenicectomy is limited to the lower lobe. On the other hand, others have insisted (Fournet²⁵ and Orsos²⁶) that the effect of the compression is as great on the apex as on middle and lower lobes. It is possible that in the normal chest the latter statement might not be far wrong but it seems evident that in lesions, especially apical lesions, fixed by fibrosis and adhesions the effect of the compression must be greatly diminished (Jensen²⁷).

The majority of observers agree that although lesions of the lower lobe are most favorably affected by phrenicectomy, some of the effects of the compression and relaxation are also transmitted even to the apex and there is available a considerable amount of clinical evidence to show that some patients do experience marked benefit and even clinical cures



Fig. 3. After parasternal anterior costectomy (November 7, 1930) cavity completely compressed. At present patient has improved greatly and gained 50 pounds.

with lesions located chiefly in the upper part of the lung. It is also certain that pleural adhesions especially in the upper lung may counteract for all practical purposes the benefit of hemidiaphragmatic paralysis. When the mediastinum is not too thickened and fibrotic, it is also fairly certain that some of the effects of the compression may be transmitted to the opposite chest. But whether or not the compression is transmitted it is not likely to be in sufficient amount to cause clinical benefit.

Most observers believe that a phrenic neurectomy should precede a thoracoplasty and many men, as Matson,¹⁹ advocate the procedure as a test operation for the good lung. Sauerbruch,⁷ however, doubts its value as a test operation.

PHRENICECTOMY AND ITS COMPLICATIONS

Whether or not to crush the nerve, interrupt it, avulse it or do the radical phrenicectomy of Goetze¹⁰ depends, in the first place, on whether one desires a permanent diaphragmatic paralysis and, in the second place, on just what the anatomy of the nerve proves to be at operation. In the vast majority of the cases avulsion as advocated by Felix⁹ is the best procedure. In cases with an accessory loop in front of and around the subclavian vein, an avulsion might tear the vein. One should watch carefully for such type of nerve and cut the anterior branch



Fig. 4. Roentgenogram (February, 1930) showing large cavity in upper lobe and air in base of chest.

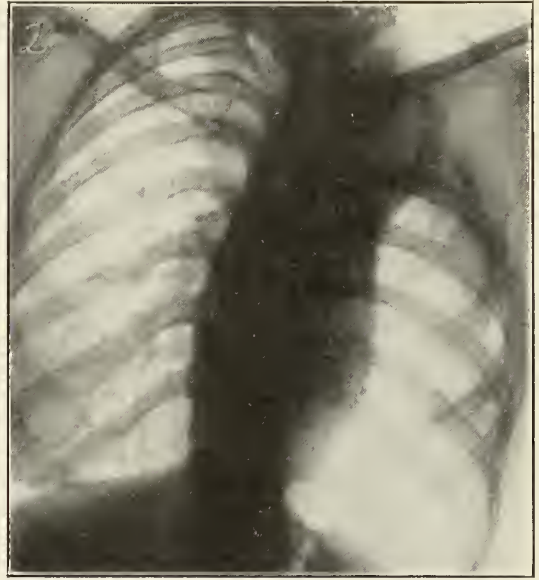


Fig. 5. Same patient as in figure 4 after upper paravertebral thoracoplasty of first seven ribs. Complete collapse of cavity. Patient is free from all symptoms.

if it is present. Matson¹⁹ shows very beautifully the anatomical reasons for considerable care.

Berry²⁸ has emphasized the rare unfavorable complications that may occur after phrenicectomy. In 1.2 per cent of 4697 collected cases, complications occurred of which .5 per cent was fatal. The operation of permanent paralysis of the diaphragm would make the prognosis of a future pneumonia considerably worse than in the normal individual because of the permanent reduction in vital capacity. Likewise, if a heart lesion supervened at a later date the decrease in vital capacity would increase the work of the failing heart.

EXTRAPLEURAL PARAVERTEBRAL THORACOPLASTY

Brauer,²⁹ an internist, suggested the operation to Frederick³⁰ who performed it in 1907 and later with a rather prohibitive mortality. Sauerbruch⁷ in 1909 and Wilms³¹ in 1911 offered modifications based upon experiments on cadavers by Gourdet³² in 1895 which demonstrated the efficacy of paravertebral resection in obtaining maximum pulmonary collapse. Brauer²⁸ more recently has advised a wider resection of ribs, especially the upper ribs, than is commonly done in the Wilms-Sauerbruch procedure. Nowadays, the underlying pulmonary pathology is taken as the yardstick for determining the length of the ribs to be resected. A typical Brauer²⁸ resection consists of about 125 cm. total rib resection distributed

somewhat as follows: Rib 1, 3.5 cm.; rib 2, 8.8 cm.; rib 3, 12.8 cm.; rib 4, 13.5 cm.; ribs 5 to 8 about 15 cm.; ribs 9 and 10 about 10 to 16 cm.

THE SELECTION OF PATIENTS SUITABLE FOR THORACOPLASTY

When it becomes evident that the chances of medical treatment are not reasonably good and after pneumothorax has been tried without a successful result, or if a less severe surgical procedure such as phrenicectomy will not answer, and the tuberculosis in the other lung will probably not be relighted by collapse of the bad lung, it should be decided whether or not the patient presents a reasonably satisfactory risk for thoracoplasty. Although it is generally considered that pneumothorax should be tried and failed before thoracoplasty is indicated, Hedblom³³ believes that in the fibrotic lesions thoracoplasty is the method of choice, even before pneumothorax for obtaining lung collapse as the lung will not reexpand after a pneumothorax anyway.

CONTRAINDICATIONS TO THORACOPLASTY

Before discussing the cases in which good results are to be expected, it seems best to emphasize the type of case in which only poor or very bad results are most probable. Bull³⁴ makes the pertinent comment, with which all thoughtful men agree, that progressive tuberculosis in the sound lung is the sword of Damocles to the patient. Thus, when tuberculosis is present in the other lung, it must be demonstrated to be nonprogressive for several months (Sauerbruch,⁷ Bull,³⁴ Stocklin,³⁵ Lorey,³⁶ Davies,³⁷ Berard and Dumarest³⁸). Most observers agree with Ochsner's⁵ statement that thoracoplasty is of little or no value in exudative tuberculosis. The statistics of Brunner³⁹ in Sauerbruch's clinic emphasized this point. In a group in which the process was largely exudative none were cured, only 15 per cent were improved and 54 per cent died. The smallest acute lesion in the hilum or the lower lobe of the better lung usually contraindicates thoracoplasty (Ziegler,⁴⁰ Sauerbruch and Spangler⁴¹ and Stocklin⁴²). Finally, it is important to estimate the cardiorespiratory reserve as stressed by Yates⁴³ by vital capacity determinations before performing a thoracoplasty on account of the increased strain upon the circulatory apparatus as a result of a diminution of the capillary bed. Thus, a heart without good function increases the risk sufficiently as a rule to contraindicate a thoracoplasty. One half of Stocklin's³⁴ operative deaths were due to cardiac failure.

INDICATIONS FOR THORACOPLASTY

Aside from a few rare symptomatic conditions in which logical reasoning would possibly suggest thoracoplasty, such as severe recurrent hemorrhage in which pneumothorax is impossible, or excessive embarrassing cicatricial contractions pull on a more or less vital organ, an adequate discussion may be given by placing the types of cases for thoracoplasty into three groups, tabulated as follows: (1) The most frequent and often the nearest to the ideal indication for thoracoplasty is the usual tuberculosis principally located in one lung and showing a marked tendency to fibrosis; (2) the second indication is found following certain complications of pneumothorax; (3) the third indication is found in tuberculosis complicated by empyema.

THORACOPLASTY IN GROUP 1

The ideal patient and the most frequent is the usual tuberculosis showing a marked tendency to fibrosis possibly without but usually with cavity formation and principally located in one lung or with an arrested lesion in the good lung. In most instances pneumothorax should have been given a trial and shown an inadequate degree of collapse. The patient should not be too old, be in fair general condition and the clinical course not definitely downward. The tuberculosis should show some evidence of healing in the form of cicatricial tissue contracture. Thus, Archibald⁴⁴ has insisted, the trachea should be deviated to the diseased side. Frequently, at the onset, the disease may have been bilateral but one side has largely cleared or has been brought to quiescence while the other side has gone on to fibrosis and the formation of cavities.

The problem is to estimate the patient's resistance. Resistance is shown by the degree of cicatricial contracture—the healing method of nature. Evidence of this cicatricial contracture is shown by the degree of displacement of the trachea, the mediastinum, the heart, the diaphragm and the increase of verticality of the ribs. Although a fair amount of sanatorium treatment should be the general rule, it may be unwise to subject the patient to a prolonged period of sanatorium care before thoracoplasty is considered, as experience teaches that large cavities seldom heal without surgical intervention.

In this first group, for the purpose of estimating the outcome, Brunner's⁴⁵ classification of (a) favorable cases, (b) doubtful cases and (c) unfavorable cases, is helpful to the careful clinician. (a) The favorable cases are the

"good chronics." Most of them have cavitation and without collapse tend to gradual deterioration within a lapse of a few years. Briefly, the patient is an adult with the disease present two years or more, in fair condition, with normal or nearly normal temperature, with a predominantly unilateral involvement of the fibroid type, usually with cavitation (not larger than a pigeon egg), a positive sputum and no sign of activity in the good lung. Artificial pneumothorax should have failed. (b) The doubtful cases are those with more extensive infiltration, multiple or larger cavitation, signs of some progression of the disease, slight fever and a pulse elevation, positive sputum but reasonably good resistance with evidence of scar contracture. In many of these cases even with the best care the prognosis is ultimately poor. (c) The unfavorable cases are the "bad chronics" with the lesion definitely progressive, extensive cavitation, the lesion a little "soft," possibly active, some fever, loss of weight and generally a picture of resistance clearly failing. Frequently, the real cause for the unfavorable prognosis is a questionable state of activity in the good lung. One may see more recent tuberculous infiltration which has more than likely been active a few months although for the time being the lesion is quiescent.

Archibald⁴⁴ classifies his cases according to Brunner's grouping as just outlined. To give some idea of the relative results in the three groups, a resumé of the results obtained by Archibald may be quoted. Of the 24 favorable cases operated on over one year previously 16 (66.6 per cent) were practically cured; 4 were greatly improved; 1 was moderately improved and 2 died. Of 45 doubtful cases, 17 (38 per cent) were practically cured, 8 were greatly improved, none were moderately improved, 2 were worse and 3 died. Of the 21 unfavorable cases, not one achieved a practical cure, only 3 were greatly improved, 4 were moderately improved and 14 died. Of the 14 deaths, 8 were ascribed to the operation and 6 to the progress of the disease.

THORACOPLASTY IN GROUP 2

The second indication for thoracoplasty is found in two sets of conditions in which pneumothorax frequently is unsatisfactory. In the first set of circumstances, the pneumothorax is a partial one with an adherent upper lobe which prevents apical compression and the apex usually contains an uncompressed cavity. In the second set of conditions, the pneumothorax may be almost total but a band of adhesions

prevents collapse of some essential area. As a partial pneumothorax, according to Matson,¹⁹ will show less than 15 per cent of recoveries, it is usually essential that further surgery be done. In the first set of conditions, thoracoplasty is indicated without dissent by most competent observers. Alexander⁴⁶ has advocated, in predominantly apical lesions, an upper seven or eight rib thoracoplasty preceded by a phrenicectomy. When the lesion extends somewhat below the apex or if the procedure of Alexander seems insufficient, certainly a complete thoracoplasty is indicated.

In the second group of conditions, opinions differ somewhat as to the best procedure. Archibald⁴⁴ and Hedblom³² rather lean toward the idea that it is preferable to give up pneumothorax and perform a complete thoracoplasty. They reason that, in the first place, intrapleural pneumolysis—the cutting of the adhesions—is followed by from 15 per cent to 20 per cent of empyema and, in the second place, that often the lung is rather irreparably damaged by continued pneumothorax so that re-expansion is not likely to be complete. On the other hand, Matson ardently advocates severance of pleuritic adhesions under thoracoscopic guidance whenever the adhesion is narrow enough to be successfully severed. Matson states that he can convert 70 per cent of the unsatisfactory cases of pneumothorax into satisfactory ones. Archibald⁴⁴ has in five instances opened the chest to cut a band under direct vision. In two of these cases he obtained an empyema. Jacobaeus,⁴⁷ the originator of the thoracoscope, believes that adhesions on the posterolateral aspect of the pleural cavity, especially those between the second and fourth ribs, are best suited for intrapleural division. Thus, it would seem that unless one were fairly expert in cutting adhesions through a thoracoscope and extremely careful in the selection of the cases, the patient is possibly just as likely to get a satisfactory result following a thoracoplasty. All in all, thoracoplasty may be the most efficient procedure.

THORACOPLASTY IN GROUP 3

The third indication for thoracoplasty is found in pulmonary tuberculosis complicated by an empyema. After pneumothorax more than 50 per cent develop a seropurulent effusion. (Saugman and Sauerbruch.) These effusions should be divided into three classes: (1) Seropurulent effusions, (2) purulent effusions, (3) mixed infectious empyema.

In the first group of seropurulent effusions, the opinion may be expressed that if the ef-

fusion obstinately recurs after aspiration and air replacement during a period of from five to six months and tubercle bacilli are present, thoracoplasty is indicated because of the likelihood of a seropurulent effusion passing into a frankly purulent effusion of the second class, which is rather too thick to aspirate and in which tubercle bacilli are definitely present. In the second group thoracoplasty is definitely indicated. Thoracoplasty is advocated for the class with mixed infections in which not only tubercle bacilli are found but staphylococci, streptococci and anaerobic bacilli. These cases usually have a bronchial fistula present. Thoracoplasty obliterates the pleural space, abolishes the effusion and forestalls the danger of a mixed infection. Because of the thickness of the pleura, a rather complete thoracoplasty is usually necessary to get the desired amount of collapse. The treatment to be recommended for this class with mixed infection is: At first frequent aspiration, but later external drainage often becomes necessary and is forced on to the surgeon although he knows that after external drainage about one half the cases die. On those cases recovering from external drainage, thoracoplasty eventually becomes necessary if the cavity is to be closed. Archibald had 15 cases of mixed infection; 8 died after costectomy. On 7 cases he did a thoracoplasty; 5 were improved or cured and 2 died.

END RESULTS OF PARAVERTEBRAL THORACOPLASTY

Finally, the prognosis after thoracoplasty in this country may be summarized briefly by quoting the results of Archibald, Matson and Hedblom. In 114 cases, excluding only cases of grave mixed infections, Archibald⁴³ had 42 practical cures, 20 greatly improved, 19 moderately improved, 4 stationary or worse, with 13 deaths caused by the operations and 16 deaths not due to the operation. Matson¹⁹ in 130 cases had an operative mortality of 10.78 per cent with a greatly improved and well group of 66.17 per cent of which 46.15 per cent are clinically well. Hedblom³² in 68 patients has 6 deaths (8.8 per cent) and 2 not improved but he states that 58 of his cases are improved and most of them are well. Thus, roughly, from 40 to 50 per cent of patients subjected to thoracoplasty, provided the cases have been properly selected, will be practically cured and another third will be moderately improved.

SUMMARY

Although several other factors play a role, the beneficial effects of surgical compression of

pulmonary tissue is largely explained on the basis of the physiological effects of rest and collapse of cavitation.

There is still some difference of opinion among equally sound men as to the efficiency of hemidiaphragmatic paralysis. The evidence, however, indicates first, that as an independent procedure phrenicectomy is of value in basal tuberculosis, especially in unilateral tuberculosis of the productive type, and symptomatic relief may follow in certain selected cases which have distressing symptoms caused by the pull of adhesions on vital structures and also in certain cases with hemoptysis. Second, that phrenicectomy is often of value as an accessory procedure to incomplete pneumothorax when basal or lateral adhesions are preventing collapse; after a pneumothorax, before the lung is allowed to reëxpand or to prolong the refill interval after pneumothorax, and finally, most observers agree that the operation is indicated preliminary to thoracoplasty.

One may summarize roughly the position of phrenicectomy in the treatment of pulmonary tuberculosis by stating that in properly selected cases of unilateral tuberculosis of the productive type, as high as 50 per cent may be benefited by phrenicectomy and that the operation should fulfill the expectations of the surgeon in about 75 per cent of the times when it is used as an accessory operation.

In general, in an otherwise hopeless group of individuals, the operation of paravertebral thoracoplasty is of great value in three groups of cases: (a) in pulmonary tuberculosis of the predominantly fibroid type, usually with but also without cavitation, and with the active lesion limited to one lung; (b) following unsatisfactory pneumothorax when an adherent upper lobe which prevents apical compression or when a band of adhesions prevents collapse of some essential area, and (c) after a tuberculous empyema of one variety or another has developed which resists conservative treatment (aspiration).

The expectation after extrapleural thoracoplasty for pulmonary tuberculosis, provided a proper selection of cases is made, may be briefly summarized as follows: about one tenth fails to recover from the operation; about one half becomes clinically free from symptoms and is restored to work; another one third is improved and the remainder die from the progress of the disease.

1316 Professional Building.

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DISCUSSION

DR. SAM H. SNIDER, Kansas City: A word about compression. This slide shows a lesion in the upper lobe. (Slide.) One would ordinarily think that is not suitable for a phrenicotomy, so let us think for a moment of compression treatment. We give the lung a rest by closing the cavity and we have the effect of squeezing the lymphatic circulation. The mediastinum is elastic and will move over with slight change in pressure. Thus we obtain a bilateral compression with a unilateral pneumothorax. (Slides.)

Here we have pneumothorax with compression on inspiration and compression on expiration. See how the mediastinum moves between inspiration and expiration, 2½ cm. of excursion of the mediastinum on respiration.

Here is an apical lesion. (Slide.) Compression affects not only the base but the entire lung. The whole lung is composed of colloids and is elastic and pressure affects the lymphatic circulation at the apex as well as at the base. Here the mediastinum has moved over and the contralateral lesion is largely cleared up.

Here is a boy who had a large cavity in the upper left with moderate changes in the upper right. (Slide.) I studied him for six months. He did not do well so we did a left phrenicotomy with little benefit. Then we did a two-stage thoracoplasty. Still the cavity was not quite closed so we went back and removed the remainder of the ribs overlying the cavity and closed the cavity. The boy has gained 47 pounds and is now able to work.

This woman (slide) was treated in one of the largest clinics in the country. She had a large cavity in

the left upper and the heart is moved over until you cannot see its borders at the right sternal margin. Pneumothorax looked impossible in that case. We started compression. In three weeks she was much improved. After six months of compression there is a fairly large pneumothorax space and the cavity is almost closed but we never were able to close it entirely by pneumothorax, so we did an apical (upper half) thoracoplasty. The cavity is now closed and the woman is getting well; she is doing her housework.

TULAREMIA

REPORT OF THREE CASES, WITH REMARKABLE
RECOVERY OF TWO

J. R. NAKADA, M.D.

ST. LOUIS

For over a quarter of a century tularemia existed without the cause being known. In 1907 Ancil Martin^{1,2,3} described the first oculoglandular case but he did not know what it was. In 1911 Pearse^{1,2} described the first clinical case which occurred in Utah and called it "deer fly fever." In 1912 Chapin and McCoy² were working on rats and rodents in Tulare County, California, to discover the cause of a plague existing there. Chapin called the isolated organism *Bacterium tularense*, after Tulare County. Chapin himself later became ill. On recovery, he noted that his blood serum agglutinated *Bacterium tularense*. He was the first laboratory worker to contract the disease but he was not certain that his illness was identical with that which he found in the rodents for little was known about the specificity of the agglutination reaction at that time. However, "deer fly fever" was not recognized as a distinct human disease entity until 1919 when Francis^{2,3} discovered the cause to be an organism which he recognized as *Bacillus tularense*. This disease thereby became the first disease to be discovered by an American. Roller¹ and others have brought out the bacteriology and pathology of this condition so well that I will cite but a few facts in order to refresh our memories.

The disease, although relatively new, is prevalent in all Western and Southern states and cases have been reported from almost every state in the Union with the exception of the New England States and one or two others. Lately, Ohara's disease, reported from Japan, has been found to be identical with tularemia.

Bacillus tularense is transmitted from rodents by an infected bloodsucking insect or by the handling of infected rodents, wild rabbits,

quail, the bite of an infected deer fly or a wood tick. The following insects have been found to convey the disease: rabbit louse, bloodsucking fly, bedbug, mouse louse, squirrel flea and the stable fly. The disease has been popularly believed to be due to the bite of the deer fly; hence it is sometimes called deer fly fever.

The disease usually has a sudden onset with a severe headache, chills, fever, nausea, vomiting, general pains, sweating and prostration. It is often confused with an acute respiratory infection or typhoid fever. A careful history, therefore, is essential.

Francis⁴ divides the disease into four types, namely; the ulceroglandular, oculoglandular, glandular and typhoid.

In the ulceroglandular type there is a history of having handled a wild rabbit, quail, squirrel or other rodent. The patient may or may not be conscious of having received a slight injury in doing so. The period of incubation varies from two to four days and the patient usually develops a severe chill with a severe headache, malaise, vomiting, fever and marked prostration. Then he notices painful, swollen glands in the neighborhood that drains the infected area. Often the site of infection is not noticed until after the glands have become swollen and painful. The temperature is usually between 102 and 103 degrees but may reach 104 degrees or higher and lasts for from two to three days, followed by a short remission for a day or two and then a secondary rise lasting for from two to three weeks. The leukocytosis may be as high as 16,000. Usually the patient is unable to get back to work for a month and is unable to get back into full swing for from four to twelve months. In one half the cases the glands suppurate.

The oculoglandular type is one with a conjunctivitis and enlargement of the regional glands.

The glandular type is one with no primary lesion at the site of infection but with enlargement of the glands.

Diagnosis is made on the history, the leukocytosis, the characteristic ulcer (which starts as a granuloma, becomes necrotic and sloughs leaving a clean ulcer which takes some time to heal), on the glandular enlargement and, lastly, on the agglutination reaction.

The differential diagnosis must be made from *B. abortus* and *B. melitensis*, as both give positive findings with tularemic agglutinins, but the serum of tularemia will agglutinate in much higher dilutions with *B. tularense* than with the other two. Rudolph⁵ says it is useless to collect the blood during the first seven to ten days as the test most likely will be negative. The titer

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From the Department of Internal Medicine, St. Louis University School of Medicine and the Division of Medicine of St. Mary's Infirmary (University Group of Hospitals).

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reaches its maximum (1:280 to 1:2560) in the fourth to seventh week. The test, according to Rudolph, is highly specific. Belote⁶ says the agglutination test remains positive for years but is not conclusive evidence. Contrary to the usually accepted opinion, he believes that typhoid and tuberculosis can simulate tularemia and that the only conclusive evidence would be the isolation of the organisms and the reproduction of the disease.

Treatment is expectant. The ulcer should never be incised as that delays healing. The glands should never be incised unless they suppurate. Simpson⁷ reports satisfactory results from convalescent serum.

Francis⁸ avers that no instance has ever been observed of transmission from one human to another by mere contact or by the bite of the insect which has already bitten the patient. He states, however, that Dr. C. E. Harris reported a case of a mother developing severe infection of the thumb, typical fever and prostration following the pricking of her hand with a safety pin while dressing an ulcer and an open gland on the neck of her son. Francis,⁹ in a personal communication to me, also said there was no record of direct transfer of the infection from one human to another. He believes the convalescent serum (titer 1:640) given intravenously 75 c.c. every other day, may prove of great benefit but Foulger et al¹⁰ obtained no improvement in their case.

REPORT OF CASES

Case 1. J. T., white man, aged 33, seen December 3, 1931, at home, complaining of severe headaches and fever. He had a chancre 16 years ago for which he took rubs for one and one half years. In April, 1931, a lump on the upper part of his breast bone after roentgen ray examination was diagnosed tuberculosis.

The patient first came to me July 10, 1931, because the tumor on the sternum began to interfere with the free motion of his shoulder. Wassermann and Kahn tests both showed four plus. Diagnosis, gumma of the sternum. Patient was put on a course of 21 intramuscular injections of mercury bichloride, 4 neosalvarsans intravenously and a saturated solution of potassium iodide by mouth. Within ten days the tumor mass had greatly diminished in size, appetite increased and he "felt better and stronger." By the end of the first course the swelling had completely disappeared. A month of rest was followed by a second course of 20 insoluble bismuth salicylates intramuscularly and 4 neosalvarsans intravenously with potassium iodide by mouth. After another month of rest the Kahn test was four plus (80 units). Three days before he was due for the third course of treatment, November 29, 1931, patient was out rabbit hunting. On the night of December 2 he developed a chill with fever, a slight hacking cough and was quite ill. Was seen on the morning of December 3 complaining of a severe headache, drowsiness, nausea, a "lump" in the right armpit and a bleb on the ventral aspect of the right small finger over the junction of the first and second phalanges.

Patient had a temperature of 103 degrees, pulse 100. Pupils normal but have a rebound to accommodation. There are a few carious teeth and evidence of a mild gingivitis. Anterior and posterior cervical glands palpable. Blood pressure 110/64. Liver is palpable one finger breadth below costal margin. Extremities normal except for the bleb on the right small finger. An enlarged gland in right axilla about the size of a hazelnut is tender.

Impression, (1) tularemia, ulceroglandular type; (2) acute respiratory infection.

Treatment, (1) absolute rest in bed; (2) force fluids; (3) icebags to head and axilla, (4) sodium salicylate and sodium bicarbonate.

The patient ran a high temperature for two and one half days, a remission for two days, a secondary rise for a day and a half after which it remained normal. On the third day after onset the blood was negative for *B. tularensis* and the Kahn report was four plus (80 units). Fourteen days after onset patient came to the office feeling fine and worked three days. Twelve days after onset Kahn was four plus (40 units) and test for tularemia was four plus (1:20), two plus (1:40) and doubtful (1:80). Sixteen days after onset abscess on small finger ruptured and axillary gland still enlarged. From December 16, 1931, to February 5, 1932, he received a third course of antiluetic treatment identical with the first course. On March 2, 1932, the Kahn was four plus (20 units); four plus (1:640) and three plus (1:1280) for tularemia three months after onset. Last seen June 24, 1932, feeling fine and had been working steadily.

Case 2. W. D., white man, aged 31, seen at home on the morning of December 4, 1931. He complained of aching for two days and fever for one day. Father died of tuberculosis, mother living but has "stomach trouble."

On November 29, 1931, patient dressed some rabbits. December 1 "did not feel just right." On the night of December 2 suddenly began having a terrific headache, chills, fever and ached all over; had felt the same all the previous day. On morning of December 4 slightly better except for a terrific headache and swelling in the right axilla. Temperature most of December 3 was 102 degrees.

Patient was somewhat apathetic and with typhoid facies. Blood pressure 124/80, reflexes are hypoaactive, enlarged axillary gland quite tender on right side.

Impression, (1) tularemia, (2) pyorrhea, early. Treatment was symptomatic and alkalis given.

Patient ran high temperature for three days, had a remission for three and one half days and a secondary rise for one and one half days, after which it remained normal. During this time he developed a callous on the ventral aspect of the first interphalangeal joint of the right index finger, aching in the right little finger and arm but no bleb or sloughing ulcer developed. Blood for Kahn test negative but tularemia was four plus (1:80), three plus (1:160) and doubtful (1:320). Patient returned to work December 10, eight days after onset. On March 2, 1932, brother-in-law said the patient had been working right along, only occasionally complaining of his finger aching but no lesion could be seen.

The interesting fact presented in these two cases is the unusually rapid recovery and the early return of patients to work. The first patient returned to work eleven days after the onset of the illness; the second returned to work

eight days after the onset. The usual period is a disability of at least a month and in the majority of cases it is from four to twelve months.

These cases arouse the questions, did the luetic infection in Case 1 have any influence on the therapy and speedy recovery, and did the therapy itself have any influence on the rapid recovery of the patient? Answering the first question, it does not seem probable that the luetic infection had any influence upon the therapy or recovery as Case 2 was free from luetic infection and recovered three days sooner than the other. Case 1 received sodium salicylate and sodium bicarbonate and was back at work in eleven days. Case 2 received sodium bicarbonate and sodium citrate and was back at work in eight days. The second case received larger doses of alkalis than the first one and recovered three days sooner. It seems more likely, therefore, that if the therapy influenced the rate of recovery, it was due to the alkalis. True, two cases are too few to permit deductions but one cannot overlook the fact that these two cases under alkali therapy recovered more rapidly than was expected. Another interesting occurrence was that the Kahn test had diminished 40 Kahn units in Case 1 when he received no antiluetic treatment. Whether this diminution was due to the antiluetic drug still in the blood or to the high temperature caused by tularemia is problematical. Granting that the blood contained no antiluetic drug one might suppose that the diminution could have been caused by the high temperature.

In contrast to these cases is a case of the usual ulceroglandular type under my observation at St. Mary's Infirmary in 1926-1927.

REPORT OF CASE

Case 3. T. S., white female, aged 62, entered St. Mary's Infirmary December 3, 1926, complaining of (1) sharp continuous pain in both hips radiating down the thighs posteriorly; (2) severe backaches and (3) frontal headaches. Family history irrelevant except that husband died of cancer. Patient had rheumatism. Appendectomy in 1916.

On November 27, 1926, patient began to have a "cold" and cough and developed a severe backache with sharp pains in both hips radiating down the thighs posteriorly. This pain had bothered her intermittently for four or five years. Since onset of present attack has also had pains in arms and shoulders so severe that she has been unable to sleep. On November 27, 1926, as patient was dressing a rabbit she ran a bone in her right thumb. Since then the thumb has become painful and tender.

Patient had a temperature of 100.6 degrees, pulse 76, respirations 26. The right pupil is regular, reacts to light and accommodation. The left pupil is irregular in outline and does not react to light and accommodation, having a cataract without vision. Thyroid palpable but no enlargement of the cervical glands. The heart is slightly enlarged. An occasional extrasystole is heard. Blood pressure 128/65.

Abdomen greatly distended with gas and some tenderness over the splenic area. The extremities are negative except for induration about distal phalanx of the right thumb.

Impression, (1) acute respiratory infection, and (2) typhoid. Urine and blood normal; Widal and Wassermann negative.

On December 9, 1926, Dr. Octavio Garcia made a diagnosis of tularemia. On December 14, patient was given 12 c.c. of 2 per cent gentian violet intravenously with only temporary improvement. *B. tularensis* successfully isolated from the infection; a guinea pig was inoculated and died in seventy-two hours. Patient had a temperature of 100.4 to 104 degrees for three days, a remission of one day, then 104.2 to 99.8 degrees for nine days with a second remission of a day, followed by three days of intermittent temperature. She remained in the hospital seven and a half months until July 18, 1927, with an occasional temperature as high as 99.4.

SUMMARY

Tularemia is the first disease to be discovered by an American, Dr. E. Francis. It is communicated by the bite of several insects. The cause is an organism named *Bacillus tularensis* by Francis.

Three cases of tularemia, ulceroglandular type, have been presented. One case (Case 3) ran the usual course while two made remarkable recoveries. Case 1 was treated symptomatically together with sodium salicylate combined with sodium bicarbonate; Case 2 was treated with alkalis alone and the third case symptomatically with one dose of gentian violet intravenously.

The question is left open, whether the alkalis may have been responsible for the unusual recovery of two cases. Treatment, heretofore, has been symptomatic with some recommendations that convalescent serum may be beneficial.

In one case the Kahn was reduced 40 quantitative units in ten days; this might have been due to the high temperature caused by tularemia.

330 University Club Building.

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TULAREMIA WITH SPECIAL REFERENCE TO THE SCHILLING DIFFERENTIAL BLOOD COUNTS

REPORT OF THREE CASES

R. B. H. GRADWOHL, M.D.

ST. LOUIS

This report consists of the study of three cases of tularemia, all belonging to the ulceroglandular type of the disease. The histories follow:

REPORT OF CASES

Case 1. G. R., male, aged 43, entered Christian Hospital, November 25, 1932. On November 21 patient cleaned some rabbits and had several small abrasions on hands at the time. November 24, ached in all bones accompanied by enlarged lymph glands, axillary, plus severe headaches. Stomach gave burning sensation; no vomiting but loss of appetite. Slight heaviness in chest on breathing. No rales.

appetite and headache. Patient had tuberculosis in 1931.

Patient went home improved.

Case 3. O. O., female, aged 42, entered hospital December 1, 1932. Patient showed general malaise, painful swelling under left arm and some swelling of left ring finger. Sixteen days previous patient dressed some rabbits and had small abrasion on ring finger of left hand. Four days later had chills. Three days after this suffered from extreme nausea and vomiting followed by loss of appetite; also had general aching of all parts of body. Chilling, nausea and vomiting increased to the extent that patient was unable to retain food.

It will be noted that these were three definite cases of tularemia, with marked clinical symptoms and showing agglutination to the *Bacillus tularensis*.

The blood picture in all the cases showed a leukocytosis varying in Case 1 from 8550 to

Table 1. Blood Picture in Case 1

Tularemia	Temperature	Red Blood Cells	White Blood Cells	Basophils	Eosinophils	Myelocytes	Juveniles	Stabs	Segmented	Lymphocytes	Monocytes
November 25	103.4	4,985,000	10,200	2	0	0	3	49	37	7	2
November 26	102.6		8,550	0	0	0	3	49	35	10	3
November 28	101.6		9,550	0	0	0	8	59	10	15	8
November 30	101.6		11,250	0	0	0	8	42	31	16	3
December 1	103.2		10,500	1	0	0	5	47	19	22	6
December 2. Agglutination for B. tularensis. Negative (12th day) ..	101.2		12,600	0	0	0	1	47	35	15	2
December 3	101.8		17,050	0	0	0	1	35	30	30	4
December 5	102.8		13,300	0	0	0	1	27	38	29	5
December 6	100.4		13,000	0	0	0	2	44	29	23	2
December 7	103.6		13,150	0	0	0	5	34	32	23	6
December 8. Agglutination for B. tularensis. Positive 1:80 (18th day)	102.6										
December 10, 5 c.c. antitularense serum	102.4		11,200	0	2	0	7	30	29	29	3

Patient went home somewhat improved.

Case 2. C. C., male, aged 21, entered hospital November 21, 1932. Eleven days previous patient was hunting and killed a rabbit; blood covered his hands. Three days later had sudden pain in left arm accompanied by swelling of finger on left hand and general enlargement of lymph glands of that arm and axilla. High temperature, chills, vomiting, loss of

17,050; in Case 2 the total count ranged from 15,800 to 20,850; in Case 3 the total count varied from 11,825 to 15,325.

It is to be noted, too, that the blood picture was a typical left shift in all the cases and at all times while the cases were under observation.

Case 1 had a neutrophilia varying from 66

Table 2. Blood Picture in Case 2

Tularemia	Temperature	Red Blood Cells	White Blood Cells	Basophils	Eosinophils	Myelocytes	Juveniles	Stabs	Segmented	Lymphocytes	Monocytes
November 21	100.4	4,765,000	19,550	1	0	0	6	53	23	12	5
						82					
November 22. Agglutination for Bacillus tularense positive..	100.	4,755,000	17,000	1	1	0	4	48	29	13	5
						81					
November 23	100.4	5,000,000	15,800	0	1	0	4	32	26	21	16
						62					
December 4	99.		20,850	2	0	0	1	42	32	19	3
						75					

Table 3. Blood Picture in Case 3

Tularemia	Temperature	Red Blood Cells	White Blood Cells	Basophils	Eosinophils	Myelocytes	Juveniles	Stabs	Segmented	Lymphocytes	Monocytes
December 2	100.8	4,630,000	15,325	2	0	0	2	33	23	38	2
						58					
December 5	99.6		12,050	2	2	0	2	25	24	42	3
						51					
December 7	99.2		11,825	1	1	0	3	21	34	33	7
						58					
December 8. Agglutination Positive 1:320	99.4		14,500	1	1	0	2	22	32	44	4
						56					

to 89 with a marked regenerative infectious blood picture. Case 2 had a neutrophilia varying from 62 to 82 with an even more marked regenerative infectious blood picture. Case 3 had a less severe neutrophilia varying from 51 to 58 with a less severe regenerative right shift.

The purpose of the presentation is simply to call attention to the uniformity of the blood picture in tularemia.

3514 Lucas Avenue.

THROMBO-ANGIITIS OBLITERANS

Alfred W. Adson and George E. Brown, Rochester, Minn. (*Journal A. M. A.*, Aug. 13, 1932), report that their experiences with sympathetic ganglionectomy and trunk resection in the treatment of Raynaud's disease due to vasomotor spasm of peripheral arteries led them to employ the same surgical procedure in thrombo-angiitis obliterans, when vasomotor spasm was a contributing factor in the production of symptoms. They consider that the real problem in thrombo-angiitis obliterans is to select suitable cases for operation and to decide when operation is indicated. It is obvious that vasodilatation cannot be produced in an arteriosclerotic or occluded artery, and that surgical intervention is useless unless there

is positive evidence of vasospasm in the remaining non-occluded arteries. The operation is not indicated in the milder cases or in those in which response is quick and favorable to medical treatment. In advanced cases of massive gangrene the condition is likewise nonsurgical unless it is hoped to effect a lower amputation than otherwise would be required. Following amputation, sympathectomy may be indicated to preserve the opposite extremity. The operation has proved to be of greatest value in slowly progressive cases and in those in which patients cannot afford or are unable to sacrifice the time required to rest in bed and receive local heat, contrasts baths and vaccine therapy. The authors present a review of 100 consecutive cases of thrombo-angiitis obliterans in which they performed ganglionectomy. There were eighty-nine bilateral lumbar sympathetic ganglionectomies and trunk resections and fifteen bilateral cervicothoracic ganglionectomies with resection of the upper portion of the thoracic trunk. Operation was performed in four cases of thrombo-angiitis obliterans involving both the upper and lower extremities, which accounts for 104 bilateral operations. Ninety-six patients were males and four were females. The condition of eighty-seven of the patients was improved by the operation. The average degree of improvement was 80 per cent.

CHRONIC ARTHRITIS OF THE KNEE

DANIEL E. KAUFFMANN, M.D.
ST. LOUIS

In this series of 210 cases of chronic arthritis the knee joint was involved in 77 cases, in 41 patients it was attacked along with one or more other joints, in the remaining 36 cases the knee joint alone was involved.

Hypertrophic changes were present in 57 cases, or 73.9 per cent of the total number. Atrophic changes were present in 20 patients, or 26.1 per cent. The etiology of those cases presenting hypertrophic changes was obesity in 27 cases, menopause 10 cases, history of injury 5 cases, evidence of dysfunctioning colon 8 cases and the remaining 7 cases were of undetermined etiology.

The causative factors in those patients presenting atrophic changes were tuberculosis in 2 cases, gonorrhea in 2 cases, pneumococci in 1 case, infected teeth in 3 cases, infected tonsils in 1 case. In 9 cases there was a generalized involvement, and in 2 other cases the etiology could not be determined.

Table 1. Relation of Pathology to Etiology	
Total number of patients	78
Knee alone involved	36
Knee along with other joints	42
Hypertrophic changes	57 or 73.9%
Etiology	
Obesity	27
Menopause	10
Injury or trauma	5
Dysfunctioning colon	8
Undetermined	7
Total	57 or 73.9%
Atrophic changes	
Tuberculosis	2
Gonorrhea	2
Pneumococci	1
Infected teeth	3
Infected tonsils	2
Generalized involvement	9
Undetermined etiology	2
Total	21 or 26.1%

COURSE OF INVOLVEMENT

All patients with chronic arthritis coming for relief, tell one of two stories, either that they had at the onset an acute infection which subsided and left the joint painful, or that the onset was gradual and finally terminated in one or several joints being involved. In the first type there is fever, redness, pain and swelling of the joint. As the condition progresses the acute stage passes, and the subacute and chronic phases ensue. The time that elapses from the acute to the chronic stage varies from sev-

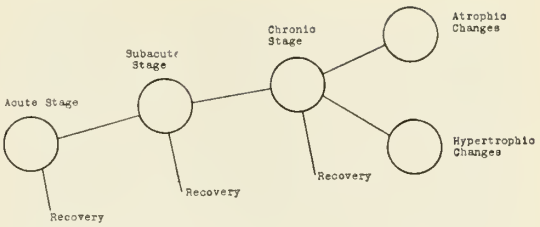


Chart 1. Shows the sequence of events in infective arthritis.

eral weeks to months. The roentgen ray findings are vague until either atrophic or hypertrophic changes begin. The bony changes may not develop for months after the pain has begun. The second type of cases, namely, those patients who have a gradual onset, present an entirely different picture. For months they will experience vague pains in one of several joints. The pain is intermittent, with a day or weeks intervening between the attacks. Finally, the attacks of pain come closer together until it is practically constant. In this type pain is the cardinal symptom with resulting limitation of movement and then deformity. There are no early local findings and signs of inflammation.

Cases in the first type present the clinical picture of infection. It is my opinion that cases in the second type are due either to a toxemia or to some metabolic disturbance. A dysfunctioning colon is an example of those due to a toxemia, while the menopause and obesity are examples of cases due to a metabolic disturbance.

In the vast majority of patients who give a history of an acute infectious onset the terminal pathology presents atrophic changes. In those having an insidious onset, hypertrophic changes are the rule.

The most important conclusion drawn from this series is that infection played no role in the etiology of the cases presenting hypertrophic changes. In those with atrophic changes infection specific or nonspecific was responsible in every instance. In the seven cases of undetermined etiology in the hypertrophic group there may have been a focus of infection which was not diagnosed. Likewise the two cases in

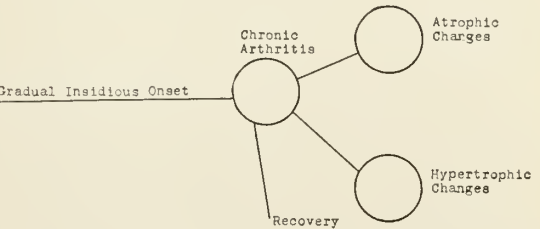


Chart 2. Shows the progressive events in toxic arthritis.

Read at the 75th Annual Meeting of the Missouri State Medical Association, Jefferson City, May 23-26, 1932.

the atrophic group may have been due to some undiagnosed condition other than infection.

If this series of cases is a criterion it can readily be seen that the pathological process, or the end result, is determined by the etiology.

The menopausal arthritis and the arthritis of obesity deserve special mention. The former is a chronic polyarthritis in women going through or just passed through the menopause. At the Aachen Clinic in Germany, the average age was 50, and the average age of onset was 47. Most women give a history of the involvement beginning in the first eighteen months of their climacteric. The disease is insidious and nonmigratory. In this condition the knee is not attacked alone. The spinal joints and the fingers present the other part of the syndrome. This constitutes the main differential point in the diagnosis. The condition is further characterized by Heberden's nodes.

The arthritis of obesity is due to deficiency in the internal secretion of the pituitary, thyroid or gonads. The pain in this type is due to the increase in weight causing trauma to the joints. It is in no way the direct result of the deficiency of the glands just mentioned. In other words, it is the obesity and not the glandular disturbance that causes the arthritis.

TREATMENT

The treatment of arthritis of the knee is no different from that for arthritis in any other joint. The treatment will be discussed under three main headings, namely, (1) medicine; (2) hydrotherapy, (3) vaccines.

The salicylates are the most important drugs used. Because of the small amount that can be given by mouth or intravenously I use neither of these two methods; I prefer giving the drug by rectum. The advantage is that mammoth doses can be given without gastric upset.

The technic is: On the first day give from 100 to 150 grains in four ounces of water by Murphy drip, following with an enema morning and night. On the second day 150 to 200 grains are given twice. On the following days give 200 to 250 grains twice daily in six ounces of water. The amount of the drug will depend upon the condition of the patient. They frequently complain of severe ringing in the ears and head noises.

This form of treatment is also especially useful in acute rheumatic fever and when the pain is severe. At the Mayo Clinic the rectal method is used, the salicylates being injected in a paste.

Hydrotherapy.—The most important form of hydrotherapy in arthritis of the knee is the contrast baths. This form of local treatment has been used for many years in Europe and

has lately become popular in this country. The procedure is very simple: A pan of hot water and one of ice water and two bath towels constitute the apparatus needed. The hot towel is wrapped around the painful joint for one minute, then the ice towel is applied for the same length of time. This is continued for twenty minutes and is done twice daily.

Vaccines.—Two types of vaccines are used in the treatment of arthritis, the specific and non-specific. The use of the former presupposes a correct bacteriological diagnosis. The most common use of this type is the gonorrheal vaccine. Two years ago I reported a series of cases treated with the pathogen selective vaccine first used by Meyer Cohen. In certain cases it has been satisfactory. The main objection to this method is that it is not always easy or even possible to make a correct bacteriological diagnosis. Briefly, this consists of culturing a supposed focus in the patient's whole blood under the supposition that only the pathogenic bacteria will grow, there being enough resistance in the blood to inhibit the growth of the saprophytic organisms.

The most successful form of the nonspecific vaccine is the typhoid. This has been used for a number of years, and in well chosen cases is capable of remarkable results. It must be remembered that the reaction is merely one of a foreign protein; the same results can be obtained with any other protein. Typhoid is used because it is standardized. The triple typhoid vaccine is most commonly employed. The initial dose is 25,000,000 intravenously. In patients above fifty years old it is best to begin with the smaller doses, ten or fifteen million. The second injection is twice the size of the first and to each following one is added the amount of the original dose. One must naturally be guided by the amount of reaction. The treatments are given twice weekly for six treatments. If there is no rise in temperature following the fourth injection, it is useless to continue. If improvement has been noted at the end of the series it is best to wait several weeks and start a new series, this time beginning with the amount that will cause a mild reaction. Because of the reactions that follow, these patients should be kept in bed or, better, in the hospital. The rise in temperature is called the "vasomotor index."

I believe the only beneficial results obtained from stock vaccines in rheumatic conditions are due to foreign protein. The objection to stock vaccines is the lack of standardization.

The importance of an etiologic classification of chronic arthritis cannot be too greatly emphasized. Not until we study the underlying

causes of each individual case will we be successful in helping the patient. The terms atrophic and hypertrophic are used to designate the pathological process, but they have no bearing on the etiology. Except in cases with a history of acute trauma, the joint findings are naturally of the highest importance; but of even greater necessity is the correlation of the joint pathology and the clinical data. The roentgen ray study of the joint should be only a part of the investigation. Careful physical examination, serological examination, blood chemistry, basal metabolic rate, and the weight height proportions should be studied.

737 Missouri Building.

ECONOMY TABLE FOR THE APPLICATION OF PLASTER OF PARIS HYPEREXTENSION JACKETS

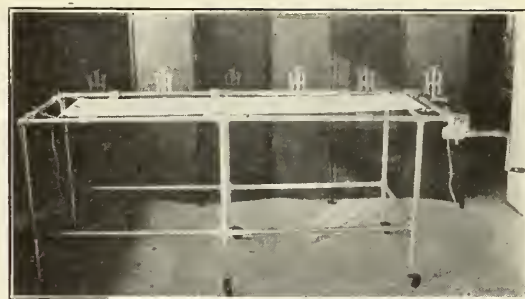
THEODORE P. BROOKES, M.D.

ST. LOUIS

Compression fractures of the spine, destructive lesions of the vertebral bodies and certain other conditions require the application of plaster of paris jackets with the back in extension or hyperextension. The Abbott type table fulfills the requirements for easy and correct application of such casts. Various modifications have been suggested in the interest of economy and convenience.

In most instances, something important is sacrificed in these alterations. A canvas hammock stretched the length of a Bradford frame cannot be further adjusted for increase or decrease of hyperextension after the patient is once on the frame. Fracture tables with the patient prone in order to bring about the backward bending of the spine, make no provision for the hammock. The canvas hammock is imperative, to limit the degree of extension, to support the sagging abdomen and to make the patient comfortable while the jacket is being applied. It adds immeasurably to the comfort and fit of the jacket.

Unless an institution has an unusually large orthopedic service, the price of the Abbott table seems disproportionately large for the number of cases that will require its use. The illustration shows a piece of apparatus that has been perhaps flippantly dubbed a "Depression-Time" table. It was developed and built at the Lutheran Hospital. The length of the body of the table is 74 inches, width 30 inches, height 34



The low-cost table for use in application of plaster of paris hyperextension jackets.

inches. This elevation brings it flush with the top of the usual hospital cart.

The frame is composed of 3/4 inch water pipe with the usual joints. Movable steel strips, 3/16 inch thick and 2 inches broad, serve to give solid support to the patient's body wherever desired. They enable the length of the "swayback" arc to be modified to meet the individual case. The roller for tightening the hammock is heavy 1 inch pipe. Steel pins through the roller served to turn it until Dr. E. W. Spinzig suggested the use of "worm and gear" for the purpose, harking back to Archimedes for his inspiration. Such a fixture was secured from the steering mechanism of a scrapped automobile and welded to the roller.

As a matter of fact, this worm and gear is superior to the fall and ratchet of the customary table. The adjustment is simple and may be as fine as desired. It does not slip and requires no lock to hold it. It is ready for immediate tightening or loosening of the roller, permitting decrease or increase of the angling of the spine after the patient is on the table. The handle for turning the gear was salvaged from an old fracture bed. It is hinged to fold out of the way when not in use. The legs were originally set in floor flanges. However, Mr. Henry Korte, the hospital engineer who built and rebuilt the table in the engine room shop, took such pride in the result that he secured regular hospital casters for the legs, two of them equipped with locks. These brought the cost of materials up to approximately \$18. The added convenience in handling is well worth the difference. The price of labor would vary. The table was constructed during the usual hours of duty at the institution.

The advantages of this improvised equipment are, (1) low cost (\$18 in this instance); (2) efficient and positive mechanism, and (3) potential portability.

On occasion the frame has been demobilized and taken to another hospital. It can be used in a home or office.

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MARCH, 1933

EDITORIALS

BILLS IN THE GENERAL ASSEMBLY

The bills in the General Assembly which hold interest for the members of our Association are chiefly those mentioned in our February issue; namely, S. B. No. 11, H. B. No. 26 and H. B. No. 282, the latter introduced after our February issue had gone to press. H. B. No. 282 is the bill providing that physicians and hospitals shall have a lien for services rendered to persons injured in accidents through the fault of another person or by accidental means, on moneys due the injured person. The purpose of the bill is to safeguard the hospital and physician against loss of fees for services under such circumstances. The bill was introduced by the Honorable A. L. McCawley, Representative from Jasper County, and has had sympathetic support by a majority of the members of the House. It was perfected on February 22 and is now on the calendar for final passage.

Senate Bill No. 11 is the administration consolidation bill abolishing the state board of health and creating a state department of health and state commissioner of health. The bill was reported out by the Committee on Retrenchment on February 3, with the recommendation that it do pass. There were rumors that an effort would be made to amend the bill, which now requires the health commissioner to be a reputable graduate of medicine, so that a layman could be appointed to this office. We are informed this proposition has been abandoned.

House Bill No. 26 provides that a physician's license to practice medicine cannot be revoked on a charge of criminal abortion until after the physician has been convicted of the charge in the courts. This would mean that the case would drag along until after the Supreme Court had passed on the case, while in the meantime the abortionist would be unhindered from continuing his practice. The bill is in committee.

House Bill No. 238 providing for the sterilization of certain inmates of state institutions was reported out of the committee on February 7 with the recommendation that it do not pass. This practically kills the bill.

The administration bills consolidating numerous boards and bureaus are on the way to perfection but no definite statement can be made at this time of the possible disposition of these measures.

House Bill No. 175 is a bad bill. Under its provisions the county court could appoint any person, medical, lay or cultist, to be deputy health commissioner. The bill does not even safeguard the community by requiring that the person be a reputable citizen. The bill at present has been perfected and printed as originally introduced. It should be defeated.

FIRMIN DESLOGE HOSPITAL OPEN

The Firmin Desloge Hospital, St. Louis, opened its doors to patients February 3. The hospital is the latest addition to the group of institutions affiliated with the St. Louis University School of Medicine.

The hospital which was constructed at a cost of \$2,000,000 was made possible through a donation under the will of the late Firmin Desloge, lead magnate and former student of St. Louis University, and additional donations by the Desloge family. The building is thirteen stories high and is one of the most modern hospitals in the country. Its capacity is 238 beds and a clinic provides facilities for the care of outpatients.

One of the fundamental functions of the hospital is to promote medical education by close association with the school of medicine. The hospital will therefore serve not only as a training ground for the undergraduate student but special facilities have been provided for postgraduate courses in all departments and for concentrating the attention of the staff upon vital medical problems.

A sliding scale of charges ranging from free patients to those in moderate circumstances will be used. Admission procedure contemplates examination of the patient's financial status as a basis for classification and fixing the charges, and a medical investigation of the patient's fitness for admission to the institution. No provision is now made for prolonged care of patients nor for chronic invalids and facilities are limited for patients suffering from communicable diseases.

The hospital is operated by the Sisters of St. Mary in association with the school of medicine. Dr. Ralph A. Kinsella, chief of staff at St. Mary's Hospital, is chief of staff and director

of the department of internal medicine at the Firmin Desloge Hospital. The chiefs of other departments follow: Dr. William T. Coughlin, surgery; Dr. John Zahorsky, pediatrics; Dr. William E. Sauer, otolaryngology; Dr. William H. Luedde, ophthalmology; Dr. William W. Graves, neurology; Dr. LeRoy Sante, radiology, assisted by Dr. L. D. McCutchen; Dr. Phillip Hoffmann, orthopedics; Dr. Cyrus E. Burford, urology; Dr. Goronwy O. Broun, outpatient department; Dr. Alexander J. Kotkis, director of the department of physiotherapy; Dr. William D. Collier, pathologist; Dr. E. A. Doisy, biochemist; Dr. Moyer S. Fleisher, bacteriologist, and Dr. John Auer, pharmacologist.

NEWS NOTES

Dr. G. Leonard Harrington, Kansas City, is spending six months at the Institute for Psychoanalysis, Chicago, studying under Professor Franz Alexander, of Berlin.

The Josephine Hospital, St. Louis, was reopened February 1 as the Josephine Heitkamp Memorial Hospital under the direction of the Sisters of Charity of the Incarnate Word. The hospital had been closed since November, 1932, for repairs and refurnishing.

Drs. Neil S. Moore and E. H. Rund, St. Louis, were guests of the Madison County (Illinois) Medical Society at a meeting held in Highland February 3. Dr. Moore spoke on "Transurethral Resection of the Prostate." Dr. Rund spoke on "Ectopic Pregnancy."

Dr. Ellis Fischel, St. Louis, associate professor of surgery of the St. Louis University School of Medicine, was guest of the St. Clair (Illinois) Medical Society, January 26, at East St. Louis, and delivered an address on "The Comparative Value of Radium, Roentgen Ray and Surgery in the Treatment of Cancer."

Dr. Archer O'Reilly, St. Louis, has been appointed associate professor of orthopedics in the St. Louis University School of Medicine. Dr. O'Reilly will be connected with the Firmin Desloge Hospital and plans extensive work for crippled children in the clinic department of that hospital and the care of crippled Negro children at St. Mary's Infirmary when that institution reopens for Negroes. Dr. O'Reilly is president of the Missouri Society for Crippled Children and is a member of several orthopedic societies.

Dr. M. W. Jacobs, St. Louis, was elected president of the St. Louis Ophthalmic Society at a meeting January 27. Other officers elected were Dr. E. C. Spitz, East St. Louis, Illinois, vice president; Dr. C. T. Eber, St. Louis, secretary (reelected); Dr. W. M. James, St. Louis, treasurer, and Dr. H. C. Knapp, St. Louis, editor.

Colonel George A. Skinner, Omaha, M. C., U. S. Army, Surgeon 7th Corps Area, was a guest speaker of the St. Louis Medical Society, February 21, and was elected honorary member of the Society. Colonel Skinner read a paper entitled "Saneness in Maintaining Physical Efficiency."

The Catholic Hospital Association of the United States and Canada will hold its eighteenth annual convention in St. Louis, June 12 to 15, with headquarters at the St. Louis University School of Medicine. The association is composed of approximately 750 Catholic hospitals in North America. Archbishop John J. Glennon, St. Louis, is honorary president and advisor of the association. The Rev. Alphonse M. Schwitalla, dean of the St. Louis University School of Medicine, is president and Sister M. Irene, secretary of the Sisters of St. Mary, is the secretary-treasurer.

Dr. J. G. Moore, Mexico, representative in the State legislature, was honored on his seventieth birthday, January 31, by the following resolution which was adopted by the House of Representatives:

WHEREAS, The Honorable J. G. Moore, member of the House of Representatives of the 57th General Assembly, has reached another milestone in life's journey; and

WHEREAS, The Honorable J. G. Moore is a valuable citizen in the great commonwealth of Missouri both as a civic leader in his community and a representative; therefore be it

Resolved, That the members of this House extend to the Honorable J. G. Moore of Audrain County, our best wishes and congratulations; and be it further

Resolved, That we wish to him many more birthdays and that each succeeding year may bring to him increasing joys and happiness.

Several St. Louis physicians took active parts in the program of the annual meeting of the Fifth District Medical Association of Texas in San Antonio, January 10, 11 and 12. Dr. Edwin C. Ernst delivered addresses on "The Most Recent X-Ray Developments in Relation to Medicine"; "The Radiation Problem in Relation to Malignancy in the Light of Recent New Developments"; "X-Ray Responsibilities in In-

ipient Pulmonary Tuberculosis," and "The Uses and Abuses of Radium in Malignancy." Dr. Ernest Sachs spoke on "Diagnosis and Treatment of Brain Tumors" and "Treatment of Head Injuries." Dr. Hugh McCulloch spoke on "The Nature of Rheumatic Manifestations in Children"; "Some Phases of Heart Disease in Children," and "Relation of Dental Caries to Diet." Dr. Elsworth S. Smith delivered an address on "Prognosis and Treatment of the Angina Syndrome in Ambulatory Cases."

Dr. Spence Redman, Platte City, was the guest of honor at a dinner given by Dr. and Mrs. L. C. Calvert, in Weston, January 25. Members of the Platte County Medical Society were guests at the dinner which was in honor of Dr. Redman's seventy-first birthday and the fiftieth anniversary of his entrance into the practice of medicine. In 1849, Dr. Elias C. Redman went from Virginia to Platte County to practice among the pioneer families of the Platte Purchase settlement. In 1862 Spence was born and twenty-one years later he began practice in the county seat where his father had practiced. Dr. Spence Redman was an organizer of the Platte County Medical Society and has served as its president, secretary and treasurer. He has been secretary of the Society consecutively since 1923 and has served as councilor of the 12th District for the last twenty-six years.

The March clinic of the Kansas City Southwest Clinical Society will be held March 14 at St. Luke's Hospital, Kansas City, Missouri. Dr. Herman L. Kretschmer, clinical professor of genito-urinary surgery, Rush Medical College, Chicago, will be the guest of the society and will deliver an address on "The Relation of Urology to Physical Diagnosis." Dr. Kretschmer will be the guest of the Jackson County Medical Society in the evening. The following members of the Kansas City Southwest Clinical Society have been appointed by Dr. P. T. Bohan, president, to act as committee chairmen for the year 1933; Dr. J. V. Bell, allied hospitals; Dr. C. C. Nesselrode, daily bulletin; Dr. Logan Clendening, distinguished guests; Dr. Hermon S. Major, entertainment; Dr. A. C. Griffith, finance; Dr. C. L. Giles, hall; Dr. Druey R. Thorn, registration; Dr. A. W. McAlester, III, round-table luncheons; Dr. Davis S. Dann, scientific exhibits, and Dr. Richard G. Helman, transportation.

The St. Louis Ophthalmic Society at a recent meeting endorsed the report of the work being done by the Trachoma Hospital at Rolla and

urged its continuance. The report in part follows:

Since the establishment in 1923 of the Trachoma Hospital at Rolla by the United States Public Health Service and the Missouri State Board of Health the medical staff has identified 5388 cases of trachoma in Missouri principally in the counties south of the Missouri River; 1773 of these patients received hospital care.

On January 1, 1933, the number of persons receiving blind pensions (from all causes) in Missouri was 3885; of these 761 had been blinded by trachoma, (19.5 per cent). While this represents a slight drop in the percentage of those blinded from this cause, trachoma still remains the greatest producer of blind pensions in the State.

In a survey conducted by the United States Public Health Service and the Missouri State Board of Health in three Missouri counties it was found that out of every twenty-six positive trachoma cases there was one person blind from the disease. If this ratio is maintained, 207 of the 5388 known cases might at some future time become blind from trachoma. This would mean an annual increase in the outlay for pensions of \$62,100. This is a conservative estimate because undoubtedly a large number of cases have never been reached by surveys.

The sixty-second annual meeting of the American Public Health Association will be held in Indianapolis, Indiana, October 9 to 12. It was in Indianapolis in 1900 at the twenty-ninth convention of the American Public Health Association that Dr. Walter Reed read a paper entitled "The Etiology of Yellow Fever—A Preliminary Note" in which he indicated that the mosquito serves as the intermediate host for the parasite of yellow fever. History was being made that day, yet it is reported by some of those present that the epochal report was received with only mild interest. It is planned to honor the only living participant in the famous yellow fever work, Dr. John R. Kissinger, at a special memorial session.

The scientific program will include discussions of practically every aspect of modern public health practice from the viewpoints of the health officer, the laboratorian, the epidemiologist, the child hygienist, the industrial hygienist, the nurse, the vital statistician, the health educator, the food and nutrition expert and the sanitary engineer.

The following speakers responded to invitations from the Postgraduate Committee of the State Association to deliver addresses at recent meetings of component county medical societies:

Drs. D. A. Robnett and M. Pinson Neal, Columbia, were guests of the Chariton County Medical Society at Salisbury, December 20. Dr. Robnett spoke on "Skin Cancers, Their Recognition and Treatment" and Dr. Neal

spoke on "Types and Common Complications of Pneumonia."

On January 13, Dr. Herbert L. Mantz, Kansas City, addressed the Nodaway County Medical Society at a meeting in Maryville on "Childhood Tuberculosis." Drs. James E. Stowers, and Carl R. Ferris, Kansas City, were guests of the Nodaway County Medical Society at Barnard on February 10. Dr. Stowers spoke on "Surgical Conditions of the Abdomen" and Dr. Ferris on "Pneumonia and Its Treatment."

The St. Francois-Iron-Madison County Medical Society had as its guests at Ironton, December 21, Drs. LeRoy L. Robertson and T. R. Ayars, St. Louis. Dr. Robertson addressed the Society on "The Feeding of Infants," and Dr. Ayars spoke on "Toxemias of Pregnancy." Drs. James B. Brown and C. H. Crego, St. Louis, were guests of the same Society at Farmington, January 24. Dr. Brown spoke on "The Treatment of Burns and Use of Skin Grafts," and Dr. Crego spoke on "Infantile Paralysis."

At the February 3 meeting the Marion County Medical Society had as its guests at Hannibal, Drs. Warren R. Rainey and Ralph A. Kinsella, St. Louis. Dr. Rainey spoke on "The Diagnosis of Rectal Lesions and Treatment in Certain Conditions," and Dr. Kinsella spoke on "Coronary Disease."

Drs. M. Pinson Neal and D. A. Robnett, Columbia, addressed the members of the Randolph-Monroe County Medical Society at Moberly, February 14. Dr. Neal spoke on "Pneumonia, Its Types, Dominant Features and Complications," and Dr. Robnett spoke on "Skin Cancers, Their Recognition and Treatment."

OBITUARY

CARYL A. POTTER, M.D.

Dr. Caryl Potter, St. Joseph, a graduate of the Johns Hopkins University School of Medicine, Baltimore, 1911, died January 23, of complications developing from an infection of the hand. He was 46 years old.

Dr. Potter was the son of a pioneer St. Joseph physician, Dr. Thompson E. Potter, who died in 1916. The elder Dr. Potter was one of the founders of the old Central Medical College of St. Joseph. The younger Dr. Potter decided while still in his teens to follow his father's profession. He was educated in the St. Joseph public schools, the University of Missouri and Johns Hopkins University. After the completion of his medical course he served two years on the surgical staff of Roosevelt Hospital, New York.

Later he served as intern in the Lying-in Hospital in New York City and Johns Hopkins Hospital. He began his practice in St. Joseph in 1913 and was associated with his father until the latter's death in 1916. He was professor of medicine in the old Emsworth Medical College during the last year of its existence.

At the United States entry in the World War Dr. Potter was appointed a first lieutenant in the army medical corps and served as a surgeon in the base hospital at Camp Gordon, Atlanta, Georgia. At the end of the war he returned to St. Joseph, resumed his practice which eventually grew until he had one of the largest practices in the city.

Dr. Potter continued as a student of medicine and surgery throughout his years of practice and was the author of many articles dealing with the relationship between medicine and the public which were syndicated by the Gorgas Memorial and published in the United States and Canada.

Dr. Potter was so modest that the broadness of his education and the extent of his fame were perhaps not entirely realized by even his closest friends. He was a member of the Buchanan County Medical Society, Missouri State Medical Association, American Medical Association, Missouri Valley Medical Association, Johns Hopkins Surgical Society, Roosevelt Hospital Surgical Society, editorial board of the Gorgas Memorial, Washington, D. C., life fellow of the American College of Surgeons and a life fellow the Medical Authors' Association.

He is survived by his widow, Mrs. Marie Potter, three sons, a daughter, his mother and seven sisters.

HENRY MUETZE, M.D.

Dr. Henry Muetze, St. Louis, a graduate of Washington University School of Medicine, St. Louis, 1891, died at the Missouri Pacific Hospital, January 25, following a stroke of apoplexy. He was 69 years old.

Dr. Muetze was born in Marburg, Germany. He came to St. Louis in 1879 and became an apothecary's apprentice. He received degrees from the St. Louis College of Pharmacy and the Missouri Dental School in 1882 and in 1891 from the Missouri Medical College. From 1891 to 1894 he was resident physician at the St. Louis Polyclinic and in 1895 he returned to Germany and studied diseases of the eye at the University of Marburg. He returned to St. Louis in 1898 and became oculist at the Alexian Brothers' Hospital, a position which he held until 1908. He had been chief oculist for the Missouri Pacific Railroad since he began practice in 1891, with the exception of the time he spent

abroad, and had been connected with the Lutheran Hospital for almost as many years.

He was active in organized medicine. He was a charter member of the Missouri Athletic Association and a member of several German societies. He was an accomplished linguist.

Dr. Muetze is survived by two daughters, one son and two brothers.

J. LEROY ATHERTON, M.D.

Dr. J. LeRoy Atherton, Springfield, a graduate of Bennett Medical College, Chicago, 1912, died at his home of coronary thrombosis, December 4, 1932, aged 53.

Dr. Atherton was born at Terre Haute, Indiana. His family moved to Nevada, Missouri, when he was three years old and he received his early literary education at Nevada and at Baker's University, Baldwin, Kansas. He studied civil engineering and was employed in this field in Chicago when he decided to study medicine. After receiving his degree in medicine he began practice in Chicago specializing in pathology. In 1915 he returned to Missouri to continue his practice and located in Springfield.

In August of 1917 he enlisted in the army and in the spring of 1918 went overseas as pathologist of the sanitary train in his division and was in active service until the Armistice was signed.

He was a fellow of the American Medical Association, an active member of the Greene County Medical Society, a member of the Approved Clinical Laboratory Association and pathologist of the Springfield and Burge hospitals. He was a Thirty-Second Degree Mason and took an active interest in all masonic activities.

Dr. Atherton enjoyed a splendid practice in his specialty and was held in high esteem by the medical profession.

He is survived by his widow, Mrs. Mary Jean Atherton, M.D.

W. J. DURANT, M.D.

Dr. William J. Durant, Rolla, a graduate of the University of Michigan School of Medicine, 1902, died October 5, 1932, aged 64.

Dr. Durant was born at Preston, Iowa. He received his early education in schools in Iowa and taught school for seven years before he began his study of medicine. Immediately following the completion of his medical course he began practice in Spencer, Iowa, where he remained until 1913. He located in Mason City, Iowa, and specialized in diseases of the eye, ear, nose and throat. After practicing in Mason City for several years he moved to Rolla where he remained in practice until his death.

Formerly a member of the Iowa State Medical Society, Dr. Durant transferred his membership to Missouri and became active in the Phelps County Medical Society. He was president of the Society in 1926, 1927 and 1928.

He is survived by his widow, Mrs. Ann Durant, two daughters and two sons.

JOHN P. ANDREWS, M.D.

Dr. John P. Andrews, Marionville, a graduate of Washington University School of Medicine, 1884, died of chronic nephritis, November 21, 1932, aged 85.

Dr. Andrews was born near Buffalo, Missouri, and secured his early education in the schools of that community. Later he attended Iowa Wesleyan University at Mt. Pleasant, Iowa, and returned to his home and taught school for several years before he began his study of medicine. He engaged in practice at Urbana, Missouri, and was a pioneer in the practice of surgery in that section of Missouri. In 1893 he moved to Marionville and practiced until four years ago when declining health forced him to retire from active practice. He had gained many friends in Marionville and the surrounding communities.

Dr. Andrews is survived by his widow, Mrs. Rintha Andrews, four daughters and four sons.

RELATION BETWEEN GASTRIC AND RENAL DISEASES

Julius Friedenwald and Samuel Morrison, Baltimore (*Journal A. M. A.*, Aug. 13, 1932), direct attention to the intimate relationship between disturbances of the kidneys and those of the gastro-intestinal tract. This is accounted for partly by the anatomic relations between these systems and their nerve and blood supply, as well as in a large degree by developing toxemias. The various lesions occurring in the digestive tract as the result of renal disease are considered. Early symptoms noted in connection with the digestive tract in renal disease are not uncommon. These are extremely pronounced at times and frequently overshadow those directly associated with the renal lesion. These symptoms should be constantly held in mind, inasmuch as relief can often be obtained under these conditions only by direct treatment of the primary disease. The gastro-intestinal symptoms occurring in uremia are toxic in nature; there appears to be an attempt in the diarrhea and vomiting to eliminate the toxin, which may be considered in a way as a compensatory measure. On the other hand, as the result of pyloric or high intestinal obstruction, renal disease may be produced associated with profound toxemia. It is also quite possible that prolonged duodenal, ileac and colonic stasis may likewise give rise to pronounced forms of toxemia, finally leading to renal involvement. The colon may also act as a focus of infection in the production of certain urinary lesions. In the study of renal and digestive disease it is therefore of importance to bear in mind the reciprocal relation of these organs to one another in order to arrive at correct conclusions in diagnosis and consequently in treatment.

SOCIETY PROCEEDINGS

COUNTY SOCIETY HONOR ROLL FOR 1933

(UNDER THIS HEAD WE LIST SOCIETIES WHICH
HAVE PAID DUES FOR ALL THEIR MEMBERS)

HONOR ROLL

Mercer County Medical Society, December 10, 1932.

Moniteau County Medical Society, January 13, 1933.

Ste. Genevieve County Medical Society, January 19, 1933.

Camden County Medical Society, January 20, 1933.

Dent County Medical Society, February 1, 1933.

Chariton County Medical Society, February 10, 1933.

MISSOURI STATE MEDICAL ASSOCIATION—76TH ANNUAL SESSION

Kansas City, May 1, 2, 3, 4, 1933

PRELIMINARY PROGRAM

Guests

Elliott, Charles A., Chicago: Parenchymatous Hepatic Disease.

Jackson, Arnold S., Madison, Wisconsin: Diagnosis and Treatment of Diseases of the Thyroid Gland.

Kronfeld, Peter C., Chicago: The Development of the Tear-Searing Operation Up to Date.

Wilson, J. Gordon, Chicago: Vertigo.

Symposia

Symposium on Diseases of the Liver:

Cole, Warren H., St. Louis: The Role of the Hepatic Function in Surgical Problems.

Helwig, Ferdinand, Kansas City: The Relationship of the Liver to Other Visceral Organs in Disease.

Hoxie, George H., Kansas City: The Symptoms and Treatment of the Cirrhoses of the Liver.

Black, Donald R., Kansas City: Jaundice.

Symposium on Gastro-Intestinal Diseases:

Williams, D. A., Kansas City: Dilatation of the Esophagus.

Thompson, Lawrence; and Soper, Horace W., St. Louis: Gastric and Duodenal Ulcer.

Orr, T. G., Kansas City: Intestinal Obstruction.

Bristow, Harry G., St. Louis: Colitis.

Sevin, Omar R., St. Louis: Carcinoma of the Colon.

Symposium on Diseases of the Heart:

Davis, R. C., Kansas City: Auricular Fibrillation and Flutter.

Harrison, Lee B., St. Louis: Heart Block.

Ferris, Carl R., Kansas City: Extrasystoles and Paroxysmal Tachycardia Other Than Flutter.

Bohan, Peter T., Kansas City: Congestive Heart Failure.

Smith, Elsworth, St. Louis: The Arrhythmias Associated With Thyrotoxicosis.

Davis, Robert C., Kansas City: Demonstration of the Lahey Clinic Film of Electrocardiography (Very Elemental).

Symposium on Tuberculosis:

Boisliniere, L. C., St. Louis: Silicosis.

Discussion opened by Dr. Jesse Douglass, Webb City.

Snider, Sam H., Kansas City: Tuberculosis of Childhood.

Discussion opened by Dr. Harry C. Berger and Dr. George H. Hoxie, Kansas City.

Kettelkamp, George D., Koch: Diagnosis and Prognosis of Adult Pulmonary Tuberculosis.

Discussion opened by Dr. H. L. Mantz, Kansas City.

Stokes, J. B., Mount Vernon: Nonsurgical Treatment of Tuberculosis; Including Pneumothorax.

Discussion opened by Dr. L. E. Wood, Kansas City.

Allen, Duff S., St. Louis: Surgical Treatment of Pulmonary Tuberculosis.

Discussion opened by Dr. W. W. Buckingham, and Dr. Earl C. Padgett, Kansas City.

Dickson, Frank D., Kansas City: Tuberculosis of Bones and Joints.

Discussion opened by Dr. James R. Elliott, Kansas City.

Symposium on Diseases of the Eye, Ear, Nose and Throat:

Green, John, St. Louis: Medicosociologic Aspects of Chronic Glaucoma.

Dean, L. W., St. Louis: The Relationship Between Diseases of the Nose, Throat and Ear and Pulmonary Diseases.

Kronfeld, Peter C., Chicago: The Development of the Tear-Searing Operation Up to Date.

Wilson, J. Gordon, Chicago: Vertigo.

Individual Contributions

Bartlett, Willard, Jr., St. Louis: Renal Complications of Gallbladder Disease.

Bills, Marvin L., Kansas City: Interpretation of Pathological Reflexes.

Campbell, F. B., Kansas City: Anorectal Infection; Its Relation to General Medicine.

Dorsett, E. Lee, St. Louis: Analysis of 1000 Cases from the Obstetrical Department of the St. Louis County Hospital.

Falk, O. P. J., St. Louis: Treatment of Cardiac Episodes of Middle Life.

Gibson, E. T., Kansas City: Narcolepsy.

Ginsberg, A. M., Kansas City: Gastric Symptoms of Acute Heart Diseases.

Glenn, J. E., and Burford, C. E., St. Louis: The Management of Bladder Diverticulae.

Hall, Thomas B., Kansas City: Enlarging Conceptions of Mycotic Infections of the Skin.

Hertzler, A. E., Kansas City: Title to be announced.

Hunt, Claude J., Kansas City: The Bleeding Duodenal Ulcer.

Reis, Carl J., St. Louis: The Increasing Significance of Allergy.

Robinson, E. Kip, Kansas City: Radium in Gynecology.

Sanford, J. Hoy, St. Louis: Transurethral Prostatectomy: Indications and Limitations.

Thiele, George H., Kansas City: The Symptomatology and Diagnosis of the Anorectal Diseases.

Werner, August A., St. Louis: Effect of the Thyroid, the Pituitary and the Gonads Upon Pre-adult Development.

Wooley, Paul V., Kansas City: Simplicity in the Treatment of Anorectal Diseases.

BOONE COUNTY MEDICAL SOCIETY

The Boone County Medical Society met in Columbia at the Boone County Hospital, December 6, with the president, Dr. D. A. Robnett, Columbia, in the chair. The attendance was good.

The board of censors reported favorably on the application of Dr. Frank W. Barden, Centralia. Dr. M. Pinson Neal, Columbia, moved Dr. A. R. McComas, Surgeon, seconding, that Dr. Barden be elected a member of the Society. The motion carried.

The application of Dr. William J. Stewart, Columbia, for membership in the Society was presented by Dr. R. S. Battersby, Columbia, and referred to the board of censors.

Dr. M. Pinson Neal, Columbia, moved that Dr. M. P. Ravenel, Columbia, be endorsed by the Society for the position of State Commissioner of Health. Seconded and carried.

The election of officers resulted as follows: President, Dr. Frank G. Nifong, Columbia; vice president, Dr. E. D. Baskett, Columbia; secretary and treasurer, Dr. S. D. Smith, Columbia; censor, (reelected three years) Dr. A. R. McComas, Surgeon; member of auxiliary legislative committee, Dr. D. A. Robnett, Columbia; delegate, Dr. Frank G. Nifong, Columbia; alternate, Dr. R. S. Battersby, Columbia.

Dr. M. Pinson Neal read an interesting paper on "Malignant Intrathoracic Tumors," illustrated with slides. It was discussed by Dr. D. A. Robnett and Dr. Frank G. Nifong.

Meeting of January 3

The Society met in the sun parlor of the Boone County Hospital, January 3, with about twenty members present, Dr. Frank G. Nifong, Columbia, the newly elected president, in the chair.

Dr. Nifong made a few pointed observations on the necessity of every member attending the Society meetings and cooperating in every way possible to make this the best year in the history of the Society.

The following committees were appointed by the president: Program, Drs. E. D. Baskett, Milton D. Overholser and Frank E. Dexheimer, Columbia; lay organizations, lay education and publicity, Drs. M. Pinson Neal, A. W. Kampschmidt and Wm. O. Fischer, Columbia; public health and legislation, Drs. Mazyck P. Ravenel, D. C. Conley and W. A. Norris, Columbia.

The scientific program of the evening consisted of an informal round table discussion on appendicitis. Dr. Frank G. Nifong opened the discussion and asked various members to talk on different phases of the subject. All phases of the disease were discussed from ancient history to present-day concepts of differential diagnosis and treatment and the education of the laity against the use of purgatives.

S. D. SMITH, M.D., Secretary.

BUCHANAN COUNTY MEDICAL SOCIETY

The regular scientific session of the Buchanan County Medical Society was called to order January 18, by the president, Dr. W. H. Minton, St. Joseph, in the Missouri Methodist Hospital.

The paper of the evening was presented by Dr. Emmett F. Cook, St. Joseph, on "Management of Abdominal Injuries." Discussion was opened by Dr.

John T. Stamey, St. Joseph, and followed by Drs. G. A. Lau, H. F. Mundy, Daniel Morton, W. T. Elam and W. T. Stacy, of St. Joseph. The discussion was closed by the author. The discussion brought out many valuable points in the emergency treatment of abdominal injuries which have become so prevalent at the present time on account of fast living, rapid transportation and the speed mania of modern civilization.

At the close of the discussion Dr. W. T. Elam, St. Joseph, moved, and Dr. J. H. Ryan, St. Joseph, seconded, that the following resolution be sent to one of our members who is seriously sick in Kansas City:

Resolved, That the Buchanan County Medical Society, learning through the daily press of the serious illness of one of its members, Dr. Caryl Potter, expresses the deep interest and concern of its members and takes this opportunity of expressing the hope for his early and complete recovery, and further that we express the hope that both he and his family be assured of the earnest desire of the membership to be of service in any way.

The resolution was immediately forwarded by telegraph to Dr. Caryl Potter, Kansas City, in care of Dr. W. W. Duke.

EMMETT F. COOK, M.D., Secretary.

CALLAWAY COUNTY MEDICAL SOCIETY

The Callaway County Medical Society met at the County Hospital, Fulton, January 12, with the president, Dr. C. H. Christian, Fulton, presiding.

Dr. R. N. Crews, Fulton, read a case record from the Massachusetts General Hospital and a general discussion by all the members followed.

The secretary-treasurer made his annual report. The Society had thirty-two meetings with an average attendance of 50 per cent of the members for the year ending January 1, 1933, the president being present at every meeting but one.

The retiring president Dr. C. H. Christian, Fulton, delivered the annual address and officially announced the officers for next year as follows: President, Dr. R. N. Crews, Fulton; vice president, Dr. C. C. Ault, Fulton; secretary and treasurer, Dr. A. D. Ferguson, Fulton; delegate to the State meeting, Dr. T. R. Frazer, Fulton; alternate, Dr. C. H. Christian, Fulton.

A. D. FERGUSON, M.D., Secretary.

CASS COUNTY MEDICAL SOCIETY

The Cass County Medical Society met December 8, at Harrisonville.

The principal speaker of the evening was Dr. Geo. H. Thiele, Kansas City, who gave a very instructive paper on "Diseases of the Rectum." His paper was of much practical interest to every general practitioner.

The following officers were elected: President, Dr. H. A. Brierly, Peculiar; vice president, Dr. A. R. Elder, Harrisonville; secretary and treasurer, Dr. J. S. Triplett, Harrisonville; board of censors, Dr. Wm. Beckman, Strasburg, Dr. D. S. Long, Harrisonville, Dr. J. S. Triplett, Harrisonville; delegate, Dr. L. V. Murray, Pleasant Hill; alternate, Dr. Wm. Beckman, Strasburg.

L. V. MURRAY, M.D., Secretary.

GREENE COUNTY MEDICAL SOCIETY

The regular meeting of the Greene County Medical Society was held December 23, 1932, in the public library with the president, Dr. U. J. Busiek, Springfield, presiding.

The following members were present: Drs. J. P. Ferguson, M. C. Stone, J. W. Love, R. Vinyard, Wm. Kelly, E. L. Evans, J. H. Fulbright, W. P. Patterson,

A. W. Gifford, J. A. Robertson, T. E. Ferrell, W. S. Sewell, Robert F. Williams, C. E. Feller, F. B. Camp, A. L. Anderson, S. F. Freeman, J. F. Leslie, O. C. Horst, E. C. Roseberry, C. Souter Smith, Lee Cox, G. D. Callaway, Wallis Smith, H. A. Lowe, J. E. Rayl, U. J. Busiek, Wilbur Smith, John W. Williams, Jr., Ronald Elkins, W. R. Beatie, W. J. Rabenau, W. H. Burke, J. D. James, J. W. Coon, M. T. Edmondson, U. F. Kerr, E. L. Cartwright, J. N. Wakeman, G. Hogg, F. T. H'Doubler and R. W. Hogeboom, of Springfield, and Dr. D. C. McCraw, Bolivar.

Drs. Robert Vinyard and Joseph W. Love, Springfield, reported on the Society's broadcasting over the local radio station. They reported that there would be no charge to the Society for a fifteen minute broadcasting period several times a week; also that when contracts with the "cults" expire they will do all in their power to discourage a renewal of a contract with them.

Dr. G. D. Callaway, Springfield, of the committee appointed to investigate delinquent members reported that eleven members were delinquent. After some discussion it was decided that although delinquent members would not be eligible to vote in the annual election, they would still be carried on the roll and encouraged to pay dues as soon as possible.

Dr. Wm. P. Patterson, Springfield, of the necrology committee read a resolution on the death of Dr. J. LeRoy Atherton, Springfield, who passed away December 4, 1932. On motion a copy of the resolution was ordered spread on the minutes of the Society, a copy sent to the widow and a copy sent to the State Journal.

Honorable Harry D. Durst, mayor of Springfield, was introduced and spoke briefly regarding the \$275,000 sewer bond issue. The Society voted unanimously in favor of the bond issue.

The following officers were elected for 1933: President, Dr. J. H. Fulbright, Springfield; vice president, Dr. Guy D. Callaway, Springfield; secretary, Dr. J. N. Wakeman, Springfield; treasurer, Dr. W. E. Handley, Springfield; delegate, Dr. Paul F. Cole, Springfield; alternate, Dr. Wallis Smith, Springfield.

J. N. WAKEMAN, M.D., Secretary.

GRUNDY COUNTY MEDICAL SOCIETY

The Grundy County Medical Society met at Trenton, January 10. The following officers were elected: President, Dr. Wm. H. Winningham, Trenton; vice president, Dr. U. C. Weston, Galt; secretary and treasurer, Dr. E. A. Duffy, Trenton; delegate, Dr. Wm. A. Fuson, Trenton; alternate, Dr. T. E. Moore, Trenton; censors, Dr. O. R. Rooks, Trenton (3 years), Dr. Wm. H. Winningham, Trenton (2 years), Dr. H. C. Kinberlin, Trenton, (1 year).

E. A. DUFFY, M.D., Secretary.

JASPER COUNTY MEDICAL SOCIETY

The Jasper County Medical Society met January 10, in Joplin at 8 p. m. Twenty members were present. The applications for membership of Dr. J. R. Kuhn, Carthage, and Dr. F. E. Rosenthal, Joplin, having been approved by the board of censors, were voted on and both applications were accepted by unanimous vote.

It was moved that the section of the By-Laws of the Society concerning the time of meetings be amended so that the meetings would be held once every two weeks instead of once a week. After some discussion, an amendment was moved that a committee be appointed by the president to investigate the individual wishes of the members of the Society con-

cerning the proposed change before the original motion was voted upon. At the suggestion of one of the members, the voting on both motion and the amendment was delayed until after the scientific program of the evening was over.

Dr. O. T. Blanke, Joplin, reported three interesting cases dealing with three different forms of toxemias causing heart lesions: (1) Male, 55 years, hypertension, cardiac hypertrophy and myocardial degeneration due to chronic alcoholic toxemia; (2) female, toxic thyroid with exophthalmia and marked cardiac involvement and death caused by subsequent lobar pneumonia; (3) chronic coronary disease with anginoid precordial pain probably precipitated by elaboration of toxins from an infected tooth and extravasation of urine into the perineum with subsequent abscess formation.

Dr. Blanke's first and third cases were discussed by Dr. L. W. Baxter, Joplin, with special regard to the urological aspects of the respective cases. Drs. Wm. H. Mallory, L. C. Chenoweth and C. M. Balsley, of Joplin, also discussed the cases.

Dr. P. W. Walker, Joplin, reported a case of right ureteral denervation for constant ureteral colic with no demonstrable pathology.

The meeting returned to the order of new business. It was shown that any motion to change the By-Laws must be presented in writing, read at the meeting when presented and that the secretary must mail such motion to all members of the Society with information of the date of the meeting when the voting would be held.

The following motion was presented to the secretary in writing signed by two members:

That the By-Laws of the Jasper County Medical Society be amended so that the regular meetings of the Society would occur once each two weeks rather than once each week.

The secretary was instructed to notify the entire membership of the proposed amendment and the date of the meeting at which the amendment would be voted on.

On motion the president was authorized to appoint a committee to call on the members in the immediate future to determine their attitude on the proposed amendment, their report to be presented to the Society before the amendment is voted upon. The president appointed the following committee: Drs. E. R. Hornback, chairman, E. E. Moody and C. M. Balsley, of Joplin.

Meeting of January 24

The meeting was called to order at 8 p. m. Twenty members were present. Visitors were Dr. C. S. Newman, Pittsburg, Kansas; Dr. Wm. M. West, Monett; Dr. H. L. Kerr, Crane, and Dr. Levy of Joplin.

The committee appointed to determine the attitude of the members toward the proposed change in meetings reported the members to be unfavorable to the change.

The application for membership of Dr. Levy was read and referred to the board of censors.

A communication from the Bureau of Medical Economics of the American Medical Association asking for an expression from the Society was read. It was moved and seconded that the secretary be instructed to inform the Bureau that the Jasper County Medical Society favors the minority report of the Committee on the Costs of Medical Care. The motion carried and the secretary was so instructed.

The president appointed Dr. A. B. Clark, Joplin, as a representative of the Society to report upon conditions of general health of the community and to investigate any cases that might be called to the attention of the Society.

Dr. L. C. Chenoweth, Joplin, was appointed as the adviser to the Society on any legal questions that may be brought up, the secretary to cooperate with Dr. Chenoweth.

Dr. A. Mitchell Gregg, Joplin, read a very interesting paper on "The Diagnosis and Differentiation of Acute Appendicitis." Dr. Gregg emphasized the difficulty of making a clear cut diagnosis, and said that the history of recurring attacks was the only constant finding to aid in the differential diagnosis. The paper was well discussed by the members and visitors. Dr. Gregg closed the discussion.

Meeting of January 31

The meeting was called to order in Joplin, January 31, at 8 p. m.

Drs. Levy, Kenney, and C. C. Fuller, of Columbus, Kansas, were visitors.

Dr. B. E. DeTar, Joplin, reported a case of symbiotic infection of abdominal wound with maggot treatment. The case was one of inguinal hernia in a woman. The wound healed by first intention until the fifteenth day when pain and degeneration appeared at the upper end of the wound. The gangrenous condition extended and after many trials of antiseptics, maggots were introduced and the wound healed rapidly.

A general discussion followed by Drs. J. L. Sims, L. C. Chenoweth, J. W. Barson, C. M. Balsley, W. L. Loveland, O. T. Blanke, of Joplin, Dr. E. J. Burch, Carthage, and Dr. Levy and Mr. Bardwell. The discussion was closed by Dr. DeTar.

Dr. L. C. Chenoweth, Joplin, reported on an epidemic of mumps.

PAUL W. WALKER, M.D., Secretary.

NODAWAY COUNTY MEDICAL SOCIETY

The Nodaway County Medical Society met in regular session January 13, at the St. Francis Hospital, Maryville. Dr. R. C. Person, Maryville, president, called the meeting to order at 7:45 p. m. The members present were: Dr. B. F. Byland, Burlington Junction; Dr. Charles D. Humbert, Barnard; Drs. C. T. Bell, K. C. Cummins, Hiram Day, C. V. Martin, R. C. Person, Jack Rowlett, and Wm. M. Wallis, Jr., of Maryville; Drs. C. W. Kirk and R. B. Bridgeman, Jr., of Hopkins. Guests, Dr. Herbert L. Mantz, Kansas City, Dr. H. L. Stinson, dentist, Maryville, and four sisters from the hospital staff.

The secretary read a letter from Dr. W. R. Jackson, Maryville, applying for admission into the Nodaway County Medical Society and the Missouri State Medical Association. The application was referred to the following committee of censors: Dr. C. W. Kirk, Hopkins, and Drs. Jack Rowlett and C. V. Martin, of Maryville, to be reported on at the next regular meeting.

The secretary asked that members pay their current dues as soon as possible.

The scientific program was furnished by Dr. Herbert L. Mantz, Kansas City, who had come as essayist through the courtesy of the Postgraduate Committee of the Missouri State Medical Association. Dr. Mantz, who is director of the tuberculosis clinic of the Kansas City General Hospital, read a paper on "Newer Methods of Diagnosis in Childhood Tuberculosis" which was illustrated with lantern slides. Dr. Mantz has a wide "genealogical" interest in tuberculosis and he emphasized the value of an early routine roentgen ray examination of all "contacts" who had associated with patients suffering from pulmonary tuberculosis. The speaker attached rather less importance to the physical signs found in the

chest on examination than have other clinicians who have addressed the Society. Dr. Mantz' paper was discussed by Drs. B. F. Byland, Burlington Junction, and C. V. Martin and C. T. Bell, of Maryville.

CHARLES C. HUMBERD, M.D., Secretary.

PEMISCOT COUNTY MEDICAL SOCIETY

The Pemiscot County Medical Society met in regular session in the Armory at Caruthersville, January 10, at 12:30 p. m. After luncheon had been served the meeting was called to order by the president, Dr. Fred L. Ogilvie, Caruthersville. Nine members were present.

The following officers were elected: President, Dr. J. W. Johnson, Hayti; vice president, Dr. G. W. Phipps, Caruthersville; secretary-treasurer, Dr. W. R. Limbaugh, Hayti; delegate to State meeting, Dr. Fred L. Ogilvie; alternate, Dr. J. B. Luten, Caruthersville; censors, Dr. J. W. Rhodes, Hayti (3 years), Dr. J. R. Pinion, Caruthersville (2 years), Dr. Fred L. Ogilvie, Caruthersville (1 year).

It was decided that the next regular meeting will be held in March at Steele.

W. R. LIMBAUGH, M.D., Secretary.

STE. GENEVIEVE COUNTY MEDICAL SOCIETY

The Ste. Genevieve County Medical Society held its annual meeting December 14, at Ste. Genevieve, with the president, Dr. J. A. Wilkins, St. Marys, in the chair. Members present were Dr. J. A. Wilkins, St. Marys, and Drs. G. M. Rutledge, R. C. Lanning, A. E. Sexauer and R. W. Lanning, of Ste. Genevieve.

The election of officers was held and the same officers were retained for the ensuing year, viz.: President, Dr. J. A. Wilkins, St. Marys; vice president, Dr. G. M. Rutledge, Ste. Genevieve; secretary-treasurer, Dr. R. W. Lanning, Ste. Genevieve; delegate, Dr. A. E. Sexauer, Ste. Genevieve; alternate, Dr. C. J. Clapsaddle, Ste. Genevieve, and board of censors, Drs. O. A. Carron, A. E. Sexauer and R. C. Lanning, of Ste. Genevieve.

The president appointed a committee on public health and legislation as follows: Drs. C. J. Clapsaddle, A. E. Sexauer and R. C. Lanning, of Ste. Genevieve.

R. W. LANNING, M.D., Secretary.

ST. FRANCOIS-IRON-MADISON COUNTY MEDICAL SOCIETY

The St. Francois-Iron-Madison County Medical Society met at Farmington, January 24. The meeting was called to order by the president, Dr. D. Appleberry, River Mines.

The names of Dr. Joseph L. Thurman and Dr. George Cresswell, of Potosi, were proposed for membership by Dr. J. P. Yeargain, Irondale.

The secretary read a letter from Dr. E. F. Hctor, Farmington, Superintendent, State Hospital at Farmington.

Dr. H. McDougal Roebber, Bonne Terre, moved that the letter be received and filed and the committee be discharged. Seconded by Dr. R. Appleberry, Farmington, and carried.

Some of the graduate nurses of St. Francois County gave a lengthy discussion on the bill before the State legislature involving the board of nurse examiners. It was thought that a protest from the Society might be in order and Dr. S. C. Slaughter, Fredericktown, moved that the Society secretary be instructed to do whatever is necessary in cooperation with the nurses.

A very interesting paper was given by Dr. James B. Brown, St. Louis, on "The Treatment of Burns and Use of Skin Grafts." Dr. C. H. Crego, Jr., St. Louis, read an informative paper on "Infantile Paralysis." Both papers were illustrated with lantern slides.

C. H. APPLEBERRY, M.D., Secretary.

ST. LOUIS COUNTY MEDICAL SOCIETY

The St. Louis County Medical Society met at the County Hospital, January 11. The meeting was devoted entirely to business. The necrology committee presented the following resolutions which were adopted.

Resolutions on the Death of Dr. Marshall Baker

WHEREAS, On January 7, 1933, it pleased the Almighty to remove from our midst our dearly beloved brother, Dr. Marshall Baker, Webster Groves, Missouri, therefore be it

Resolved, That in Dr. Baker's death the St. Louis County Medical Society has lost a member of long standing and sterling character, and the county a worthy citizen; and be it further

Resolved, That we extend our sympathy to the surviving relatives and that a copy of these resolutions be spread upon our minutes.

Resolutions on the Death of Dr. Howard Carter

WHEREAS, On November 4, 1932, it pleased the Almighty to remove from our midst our dearly beloved brother, Dr. Howard Carter, therefore be it

Resolved, That in Dr. Carter's death the St. Louis County Medical Society has lost a loyal and valuable member, and the county a worthy man; and be it further

Resolved, That we extend our sympathy to his surviving relatives and that a copy of these resolutions be spread upon our minutes.

Drs. J. A. Bauer, F. J. Canepa, W. E. Harrall and D. P. Ferris, of St. Louis County, were elected to active membership by transfer from the St. Louis Medical Society.

Dr. W. J. Dieckmann, Chicago, was granted a transfer to the Cook County (Illinois) Medical Society.

Chairmen of committees for 1933 were appointed as follows: Program, Dr. J. H. Armstrong, Kirkwood; legislation and public health, Dr. John O'Connell, Overland; entertainment, Dr. W. F. O'Malley, Webster Groves; membership, Dr. R. B. Denny, Creve Coeur, and necrology, Dr. W. H. Townsend, Maplewood.

Meeting of January 25

The Society held its first evening meeting of 1933 at the County Hospital, January 25. The attendance was good and many of those present expressed the desire for evening meetings.

After a short business session two case reports were presented. Dr. O. P. Hampton, Jr., University City, presented a case of compound, depressed skull fracture now of one year's duration. Dr. Andy Hall, Jr., St. Louis, reported a case of kinked ureter with hydronephrosis. Both reports were freely discussed.

O. P. HAMPTON, M.D., Secretary.

WOHLFAHRTIA MYIASIS REPORTED

G. D. Gertson, Grand Forks, N. D.; W. E. G. Lancaster and G. A. Larson, Fargo, N. D., and G. C. Wheeler, Grand Forks, N. D. (*Journal A. M. A.*, Feb. 18, 1933), report two cases of Wohlfahrtia vigil myiasis, one of the penis and one of the eye and state that their search of the literature failed to reveal another identified case of Wohlfahrtia vigil myiasis involving the adnexa of the eye. It is probable, however, that the larvae may develop on any exposed area of skin on which eggs are deposited by the fly.

WOMAN'S AUXILIARY

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

11th Annual Meeting, Milwaukee, 1933

President, Mrs. James F. Percy, Los Angeles, Calif.

President Elect, Mrs. James Blake, Hopkins, Minnesota.

WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION

9th Annual Meeting, Kansas City, 1933

President, Mrs. David S. Long, Harrisonville.

President-Elect, Mrs. Hudson Talbott, St. Louis.

ORGANIZED COUNTIES AND PRESIDENTS

COUNTY PRESIDENT AND ADDRESS

Boone.....	Mrs. C. M. Sneed, Columbia
Buchanan.....	Mrs. C. H. Werner, St. Joseph
Cass.....	Mrs. H. A. Brierly, Peculiar
Cape Girardeau.....	Mrs. W. W. Ford, Gordonville
Clay.....	Mrs. H. J. Clark, Excelsior Springs
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Greene.....	Mrs. W. C. Cheek, Springfield
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Saline.....	Mrs. L. S. James, Blackburn
Vernon-Cedar.....	Mrs. T. B. Todd, Nevada
26th District.....	Mrs. W. H. Breuer, St. James

MESSAGE FROM PRESIDENT LONG

The meeting of the State Board of the Woman's Auxiliary held in St. Louis on January 23 proved to be a very happy occasion. Though the attendance was small, due to considerable illness among the members, there was a fine interchange of thought and plans combined with splendid reports of out-state work and committee chairmen.

The recommendations of the president for a tuberculosis essay contest, for public relations meetings on tuberculosis, for *Hygeia*, and for the story of Jane Todd Crawford are being carried out almost 100 per cent. It is felt that by the time of the State Meeting every county auxiliary will be able to report real accomplishment.

The beauty and charm of the hospitality of the St. Louis women will always be a happy memory. Mrs. A. G. Wichman, president of the St. Louis Medical Society Auxiliary, gave a beautiful tea on Sunday evening to the members of her board and their husbands in honor of the members of the state board. The following day a luncheon was given at the Park Plaza Hotel with a large attendance. Mrs. Edwin H. Bosse sang a group of beautiful songs, and the state president told of her recent trip to Washington, D. C.

The *Hygeia* subscriptions are not what they should be to fill the quota for Missouri this year. This is the one service which the American Medical Asso-

ciation has asked of us and it is the most far-reaching influence for scientific health education. I was talking with a group of high school students recently who told me that no magazine in their school library is as much in demand as *Hygeia*.

We all know the Missouri Auxiliary holds an enviable record for *Hygeia* subscriptions. The achievement for this year is good but our state chairman, Mrs. C. T. Ryland, is anxious that we do not fall below last year's standard.

Won't you, whose *Hygeia* subscriptions are lagging, read again in the *STATE JOURNAL* for December the urgent plea for *Hygeia* from our late national president, Mrs. Walter Jackson Freeman?

Following recommendations of the State Tuberculosis Association, your county tuberculosis society would be justified in contributing to group *Hygeia* subscriptions for schools, libraries, reading and rest rooms in the interest of public health education.

Thirteen counties have placed 450 subscriptions. Our quota is 560. If the remaining county auxiliaries would provide 10 each we would go over the top in grand style—to the credit of our state and to the joy of Mrs. Ryland and myself and, best of all, in behalf of the best means for spreading health education.

Among several cheerful county auxiliary reports I have space for just one. From Greene County is a somewhat belated but cumulative report of activities of which we are glad to hear. An increased membership, good health programs, cooperation in a week's clinic for babies of parents not able to pay which resulted in the examination and treatment of 620 children with follow-up work continued one day a week. A public relations luncheon was announced for February 21, with an address by Dr. Herbert Mantz, Kansas City, on "Some New Concepts of Tuberculosis." This Auxiliary reports an interesting but not unparalleled experience-meeting on "barbers" for professional services of husbands. Beauty parlor service, jewelry, hooked rugs, shrubbery, butter, eggs, potatoes, etc., are among the exchanges "where folks are grateful but money 'ain't'."

Our national Auxiliary has recently issued a handbook which should be in the hands of every member. In addition to the foreword and historical sketch the four parts give us the following: Part 1, reasons for a woman's auxiliary and a review of present functions; Part 2, administration, duties and responsibilities of state officers and of the state organization chairmen; Part 3, education, duties and responsibilities of the state president, chairmen of programs, *Hygeia*, public relations and press and publicity, and Part 4, the state convention, purpose, program, factors that make for success and technic. Helpful instruction and suggestions for county auxiliary units are given and are involved with those for state officers.

A tentative form of the handbook was issued more than a year ago by Mrs. McGlothlan during her administration. Last fall she and Mrs. Walter Jackson Freeman revised and expanded the original into the present form. Mrs. McGlothlan herself says of the Handbook:

"'Know Your Auxiliary' is the slogan of the auxiliary this year. It is believed that a study of this handbook by officers and by all auxiliary women will tend to unify our organization as to purpose and methods of work. In our letters to state presidents and chairmen earlier in the year it was suggested that the handbook be used as a guide and as a basis for conference discussions in county auxiliaries, at state conventions and at the national convention. We trust that constructive suggestions growing out of such conferences will be recorded for future use when another revision is found desirable.

"Those who prepared this handbook do not claim perfection for it; they regard this revision as the second of a series of steps in the right direction. The suggestions it contains have grown out of the experience of the many informed, earnest and wise workers who have promoted the growth of the organization from its beginning. The handbook is not a static thing. As our organization grows and our experience enlarges, changes must be made.

"At present we hope it may serve as a guide for new officers and chairmen, as a source of helpful information to all members and that those with experience will cooperate in making it more complete and continually better suited to our needs. To whichever class you belong you can make your contribution only by a thorough study of the handbook."

If you do not have your copy already, order it now from Mrs. J. Newton Hunsberger, 514 West Main Street, Norristown, Pennsylvania. The price is forty cents for a single copy, \$4.50 for a dozen copies.

BOOK REVIEWS

A MANUAL OF PHARMACOLOGY AND ITS APPLICATIONS TO THERAPEUTICS AND TOXICOLOGY. By Torald Sollmann, M.D., Professor of Pharmacology and Materia Medica in the School of Medicine of Western Reserve University, Cleveland. Fourth edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company. 1932. Price \$7.50.

The author has added to this excellent textbook additional data on barbituric acid derivatives, hepatic extracts and the pituitary and sex gland hormones. Since the last edition in 1929 his bibliography has increased until it now occupies 107 pages. The material is thoroughly up-to-date. A. S. W.

AN EXPERIMENTAL AND CLINICAL STUDY OF PAIN IN THE PLEURA, PERICARDIUM AND PERITONEUM. By Joseph A. Capps, M.D., Professor of Clinical Medicine, University of Chicago. With the collaboration of George H. Coleman, M.D., Assistant Professor of Medicine, Rush Medical College. A foreword by Anton J. Carlson, M.D., Ph.D., Chairman of the Department of Physiology, University of Chicago. New York: The Macmillan Company. 1932. Price \$3.00.

This book summarizes the author's study of visceral sensations over the last twenty-five years. The study was done by the ingenious method of passing a silver wire through a trocar into the pleural cavity, the pericardial cavity and the peritoneal cavity. Both the visceral pleura and visceral peritoneum were found to be insensitive, but the irritation of the parietal pleura or parietal peritoneum caused severe pain which the patient could definitely localize. No pain was produced by irritating either layer of the pericardium, which supports the clinical observation that pericarditis without effusion is a painless disease.

The main object of the work is to show that most visceral organs are insensitive to ordinary stimuli. The book contains some practical points for the general practitioner and is a good reference work for one especially interested in the subject of pain in visceral disease.

If the author had merely stated what his studies showed no criticism could be offered, but the reviewer is unable to see any evidence whatever that the studies corroborate the theory of the viscerosensory reflex.

P. T. B.

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E. J. GOODWIN, M.D., Editor
1023 Missouri Building, St. Louis, Mo.
Telephone, Jefferson 5261.

PUBLICATION COMMITTEE { J. C. B. DAVIS, M.D., Chairman
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OBSERVATIONS ON TRANSURETHRAL PROSTATOTOMY

CHARLES GREENBERG, M.D.

ST. JOSEPH, MO.

The history of the evolution of the transurethral attack on the prostate has been given in great detail by a number of authors. However, I feel that I cannot miss this opportunity of paying tribute to Dr. John Caulk, to whom I feel is due a great deal of credit for his persistence in keeping the attention of the profession centered on the problem of the transurethral resection of the prostate under almost universally adverse criticism. While the punch operation of Hugh Young was practically the first satisfactory method, Caulk's modification, by which he converted this instrument into a cautery punch, was in my mind the real beginning of modern transurethral prostatotomy. Stern in 1926 presented his resectoscope which was the original of our present modifications and a great deal of credit is due to T. M. Davis who improved and perfected this instrument and who in a large number of cases satisfactorily demonstrated that the removal of prostatic tissue by means of an electric current was a feasible and successful operation. McCarthy later adopted this principle and applied it to his resectoscope, and his instrument, in my mind, is by far the most superior to be presented up to this time.

Criticism of this comparatively new procedure has been rather intense. Some of it has been justified but as is always the case the majority of the criticism has been due to lack of information on the procedure or its results. It has been our impression that the general surgeon apparently has the opinion that the operation will give just temporary results and that sooner or later the patient will have to return for a complete prostatectomy. It was with this in mind that I was led to review the results of a limited number of patients I have had in which the Caulk cautery punch operation was done. It was decided to include no cases that were

done later than 1930, a report of which will be included in this paper.

Long before attempting to use the cautery punch, I had frequently observed that an enlarged gland would shrink appreciably in size following suprapubic drainage, with the resultant removal of residual urine, and I felt that there should be no logical reason why the same diminution in size would not occur if the residual urine were relieved by some other method. For ten years Caulk has studied the transformation and the transition, both by rectal and cystoscopic study, of a large number of patients of prostatic drainage and partial removal, and with but few exceptions he observed that the gland presented a most striking tendency to diminish in size and undergo retrogression. Incidentally, he also states that pathologists have as yet failed to agree as to whether the essential pathology concerned in prostatic overgrowth is neoplastic in nature or of some peculiar degenerated phenomenon, or as the result of chronic inflammation.¹

It has been amply demonstrated that the functional results obtained by prostatic resection compare favorably with those following prostatectomy, but it should not be overlooked that functional results following prostatectomy are by no means always favorable.

In a series of 250 cases reported by Bumpus, of the Mayo Clinic, in which transurethral resection of the gland was performed, 6 per cent was performed on patients who previously had undergone a prostatectomy.²

The report of my cases is confined to those done from 1925 to 1930 in the Missouri Methodist Hospital, on account of the convenience of assembling the material. Letters were sent to eighty cases. Of these 54 per cent replied. The classification of their ages follows:

AGE CLASSIFICATION

30 to 40 years.....	1
40 to 50 years.....	1
50 to 60 years.....	7
60 to 70 years.....	12
70 to 80 years.....	17
80 to 90 years.....	5

The average preoperative time in the hospital was five days while the postoperative time was $6\frac{1}{2}$ days. In the questionnaire the patients were asked "What percentage of improvement do you feel has been accomplished by your operation, on the basis of 100 per cent?" The reports show an average of 91 per cent improvement. The amount of retention in these patients prior to operation varied from 60 c.c. to complete retention.

The pathological classification of those cases that reported follows:

PATHOLOGICAL CLASSIFICATION

Scirrhus carcinoma	1
Adenocarcinoma	3
Adenoma	2
Hypertrophy of prostate.....	14
Hyperplasia of prostate.....	7
Myomatous hyperplasia of prostate.....	2
Fibrous hyperplasia of prostate.....	8
Chronic inflammation	1
No report	5

Of those who did not reply, the classification according to age was as follows:

30 to 40 years.....	0
40 to 50 years.....	0
50 to 60 years.....	4
60 to 70 years.....	13
70 to 80 years.....	13
80 to 90 years.....	7

The average preoperative time in these cases not reporting was $7\frac{1}{2}$ days while the postoperative time was 6 days. Calculi were found in five of these cases. The classification of the pathology of these cases follows:

Carcinoma	2
Adenocarcinoma	2
Chronic productive prostatitis.....	1
Fibrous hyperplasia of prostate.....	13
Hypertrophy of prostate.....	10
Atypical hyperplasia of chronic prostatitis	1
No report	8

Six deaths following operation were with but one exception extremely poor risks upon whom a prostatectomy was out of the question. We were able to get a postmortem on one case which might serve as an illustration of the type of cases these represented. This patient had the following postmortem findings: Cirrhosis of liver, ascites, chronic bronchitis, chronic pleurisy, chronic myocarditis, infarct of heart, aneurysm of left ventricle, coronary occlusion, chronic splenitis, chronic nephritis. One of these patients developed a pericystic abscess and died following operation for drainage. The remaining four cases died of hypostatic pneumonia.

Two operations were performed on patients who had had a previous prostatectomy. A brief report follows:

J. G., aged 63, admitted 11/4/29. Prostatectomy 8/28/29. Since then has a suprapubic fistula. Preoperative time two days and postoperative four days. Discharged voiding normally.

G. L. A., aged 67, admitted 7/13/28. Suprapubic 3/14/28. Diagnosis: Carcinoma of prostate. Preoperative time one day, postoperative five days. Discharged voiding small quantities.

We had eight cases of carcinoma of the prostate. One had two operations with good results and one had had two operations in a period of about a year which was followed later by insertion of a permanent suprapubic tube. We were unable to grasp any tissue satisfactorily with the cautery punch at this time.

The following are cases in which prostatectomy was necessary immediately following punch operation. It will be noted that none of these was suitable for the punch operation, the glands being too large. These patients were all advised to have a prostatectomy or suprapubic cystostomy on admission. However, they all requested that a punch operation be at least attempted and, feeling that they had everything to gain and nothing to lose, a punch operation was performed:

J. C. A., aged 76. Diagnosis: Adenocarcinoma of prostate. Cautery punch 7/5/30 was not successful. Prostatectomy 8/14/30 which was successful.

G. W., aged 80, admitted 2/5/29. Very large prostate. Refused prostatectomy. Cautery punch was unsuccessful and was followed by the insertion of a permanent suprapubic tube.

M. H., aged 83. Diagnosis: Adenocarcinoma of prostate. Cautery punch 8/2/28 was unsuccessful. Permanent cystostomy performed 8/21/28.

B. A. R., aged 76. Very large gland. Cautery punch 1/30/29 was unsuccessful. Permanent cystostomy 2/24/29.

B. F. McG., aged 81. Very large prostate. Patient advised condition required prostatectomy but insisted upon the punch operation which was not successful. Prostatectomy 11/11/29.

In two cases prostatectomy was done several years following the punch operation, one six years later the other five years. A short report follows:

H. D., aged 71, admitted 11/15/25. Cautery punch 11/17/25. Remained in good condition until 7/20/31 when he was readmitted to hospital with severe hemorrhage. It was necessary at this time to do a cystostomy. Prostatectomy was done later and patient discharged in excellent condition.

D. L. F., aged 69, admitted 6/16/26. Advised to have a prostatectomy but he requested that the punch be attempted. His condition upon admission was very poor and for that reason we were quite willing to attempt it. . . His condition remained good until 3/6/31 when he was again admitted with urinary difficulty which had existed for about three weeks. Prostatectomy was done with excellent results.

A number of these patients were to my mind unsuitable for the punch operation but we were quite often surprised and gratified with the results obtained. Patients who were considered

unsuitable for the cautery punch would now, I feel, be excellent cases for the McCarthy resectoscope. In fibrosis or median bars a cautery punch is just as efficient as any other instrument, but in larger obstructions where it is necessary to remove more tissue, I prefer the McCarthy. Visualization is far superior and we are able to remove much larger and longer sections.

In the replies received, only one patient expressed any dissatisfaction with the result and that was a case of adenocarcinoma of the prostate in which it was impossible to do a prostatectomy. In his reply he states that he has frequency and nocturia. We consider the fact that he is able to urinate at all quite satisfactory.

Since 1931 we have had more than fifty cases using the Caulk punch, Davis-Stern and later the McCarthy. We have used it on all types of cases and our results with the McCarthy resectoscope have been quite satisfactory. We have had two deaths in this series, one carcinoma and the other adenoma.

We are very much encouraged with the results obtained by the use of Caulk's cautery punch and we expect a far greater proportion of successful results by availing ourselves of the advantages presented by the McCarthy resectoscope.

Rather an important point which we feel is frequently overlooked by the general surgeon in his consideration of prostatic obstruction is, that it is the location of the obstruction and not the type which is important. If one would bear in mind that the lumen of the male urethra is comparatively small and capable of not much greater dilatation than one centimeter, it could readily be understood that it would not require a great amount of prostatic tissue to obstruct it, partially or totally. At the present time, I cannot honestly state that I feel that this procedure is applicable in all types of prostatic enlargement. The particular type in which I feel it is contraindicated is one which is excessive in size with lateral lobes having marked extravescicular extension and with lengthening of the prostatic urethra.

In carcinoma we feel that it is the operation of choice and the results undeniably superior to open surgery. We do not, however, feel that the transurethral resection will entirely replace prostatectomy, particularly in enormously hypertrophied glands. But glands of this size undoubtedly constitute the minority of those seen. I also strenuously object to the term "minor surgery" as applied to this procedure. In my opinion, any surgical procedure directed to the prostate of an elderly patient cannot be considered a minor one. The term should only

be used relatively. Many cases seen are in very old men in extremely poor physical condition and they should be prepared as carefully as if for a prostatectomy, the advantage being that they do not have to be in as nearly good condition or do not require nearly as long preparation as for the radical operation. Each case should have adequate preliminary treatment with the object of restoring as far as possible normal renal function. The cardiovascular reserve should be built up and the general condition should be improved as much as possible. We are greatly impressed with the important place that transurethral procedures can play with beginning symptoms of retention and feel that the profession should pay strict attention to the early symptoms of prostatism, for it is at this time that the obstruction can be removed with very little difficulty and in that way prevent later complications. This is of particularly great importance when one reviews the mortality of major surgical manifestations in prostatitis.

One of the first questions which should be asked an elderly male is in regard to nocturia. Most of the patients with whom we have come in contact believe it is perfectly normal to void two, four or five times at night, feeling that it is a natural condition accompanying old age. In fact, quite often these patients are told by their physicians not to submit themselves for examination or operation as long as they appear to be in good health otherwise. A patient with even a slight degree of prostatic obstruction cannot have entirely healthy kidneys.

The efficiency of transurethral operations is becoming more and more recognized. Caulk reports 647 cases; of the last 137 operations done on 87 patients 43, or 40 per cent were enlarged prostates; 85 per cent had been cured or practically so by the punch. The results have been satisfactory and recurrences few.³ Bumpus at the Mayo Clinic during 1931 reports that 40 per cent of the patients with prostatic disease were treated by this method. Lower⁴ has used this technic in 118 cases with gratifying results.

The question is frequently asked as to the amount of tissue which should be removed. We were impressed by the gratifying results obtained by the cautery punch when a comparatively small amount of tissue was removed from the gland and felt that a technic which necessitated the removal of most of the gland or what might be termed "transurethral prostatectomy" was not necessary. While there have been radical changes in the instruments the technic has not necessarily been changed. After one has removed the obstructing portion

of the gland, it is our opinion it will not be necessary to remove any more. We remove enough of the prostate so that a channel can be seen from the venumontanum to the trigone. It is important to remove enough tissue so the bladder may empty itself completely as shrinkage of the gland is not liable to occur if the drainage is not complete.

The question is also asked what type of cases can be treated by prostatotomy. At the present time, our opinion is that it is possible to treat practically all cases of prostatic fibrosis, the majority of cases of prostatic hypertrophy and carcinoma. What are the advantages of the transurethral resection? Primarily, it will eliminate the fear of total prostatectomy and it will encourage patients to seek relief before irreparable damage to urinary and other systemic organs has occurred. It has the advantage of minimum mortality and economy of time and expense, and also little operative risk. We are able to give relief to bad risk patients who would be denied prostatectomy.

Prostatectomy involves a greater risk than any other surgical procedure for the correction of a benign condition. The functional results from a prostatectomy are not universally good. Permanency is comparable to that of prostatectomy which operation has deterred many from seeking relief.

SUMMARY

The experience of Caulk, Davis, Bumpus and others indicates the permanency of results. The applicability of the method should depend entirely on the amount of tissue it is necessary to remove. If this is in excess of 20 grams, I believe with Bumpus that a prostatectomy is probably indicated.

Should there be a recurrence, I do not believe it should be considered a contraindication to this type of surgery as the patient would generally be confined to the hospital from seven to ten days and frequently less, so that a repetition of the procedure seems preferable to enucleation.

Transurethral prostatotomy is not a minor surgical procedure and should not be attempted except by an experienced and trained cystoscopist.

Physicians & Surgeons Building.

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HEPATOMA WITH LATE DISSEMINATION

W. P. GLENNON, M.D.

AND

R. V. BYRNE, M.D.

ST. LOUIS

A rather extensive search through the literature quickly convinces us that primary tumors of the liver may manifest themselves in many obscure and varied ways, both macroscopically and microscopically. The histological structure of the liver is so complicated and so easily accessible to various stimulations that the microscopic picture of its tumors is often very difficult to interpret, particularly with regard to the question of origin. Much controversy has arisen as to the embryogenesis of primary liver tumors. It is usually conceded that the majority of primary liver tumors are of biliary origin and, less commonly, arise from liver cord cells; as a result there have been offered explanations which are at some variance with the usually accepted theory of the origin and development of typical neoplasms. The clinical syndrome and the gross pathology differ somewhat in a series of cases. Renon, Geraudel, Monier-Vinard,¹ Cabot,² L'Esperance³ and Ewing⁴ report cases in which they believed the growths to have multicentric origins. In the case that we have studied the tumor appears to come from a unicentric origin. Many references are made to the presence or absence of cirrhosis in the remaining liver substance and some believe that cirrhosis has a part in the etiology of primary liver tumors. However, there are cases reported in children without cirrhosis of the liver which are claimed to be from a cell rest of a congenital origin. Metastasis varies the clinical picture offered by these patients, some metastasizing widely, but Ewing⁴ believes that hepatomata metastasize early in the disease only in the liver and to other tissues later. So that a review of the cases reported in the literature gives a summary of a condition which has various different histological and pathological manifestations. It is possible that this difference is regulated to a more or less extent by the degree of malignancy reached by the process at the time it comes under observation.

The term hepatoma as used by present day writers is often confusing. It is invariably used to denote a primary tumor of the liver arising from liver cord cells and is frequently used interchangeably for both adenoma and carcinoma. Ewing⁴ in his treatment of this subject uses the

From the Department of Surgery St. Louis University, and Surgical Service St. John's Hospital.

terms synonymously with adenoma. Other writers use the term hepatoma to describe a single tumor in the liver, well encapsulated and clinically benign, regardless of whether the tumor is well differentiated microscopically, an adenoma, or microscopically more complex, a carcinoma.

Primary liver tumors are rare. Orth⁵ reports an incidence of $\frac{1}{4}$ of 1 per cent in a series of two hundred and fifty-eight cases of hepatic cancer. Goldzieher and Bokay⁶ saw eighteen cases among six thousand general autopsies, an incidence of 1.3 per cent. Others have described solitary cases among whom are Ribbert,⁷ Prescott,⁸ Miller,⁹ Karsner,¹⁰ while Rolleston added several more cases. Rolleston¹¹ collected thirty-two cases under ten years of age. Ewing⁴ believes these tumors to arise in children from congenital maladjustment of groups of liver cells predisposing them to tumor formation which is a very rare factor in adults. Yamagiwa¹² reports several cases of hepatoma in children in two of which he found islands of bone and mucoid tissue.

In the case reported in this article we have been fortunate in being able to interpret some of these problems with a fair degree of clarity. This case presents what we believe to be a typical liver cord cell tumor and our observations have been over a sufficient period of time to enable us to draw a clinical picture of considerable value.

REPORT OF CASE

F. B., aged 49, was admitted to St. John's Hospital on May 7, 1925, to the service of Dr. C. H. Neilson. The patient was then suffering from pain in the upper right quadrant of the abdomen, also pain in the region of the left kidney, loss of weight (twenty pounds during last two months) and suffered from belching. Patient connects the onset of his gastric symptoms and abdominal pain with a fall eight years before when four ribs on the right side were fractured. Pain followed this fall and has been relatively constant ever since but is in no way associated with the intake of food. About two months ago pain became more acute and he consulted his physician. Pain is not colicky in nature nor does it radiate to the back or across the abdomen. He was a fireman by occupation, married, one child.

Examination.—Patient well nourished. Had several bad teeth. Nothing abnormal in the chest. The abdomen was somewhat distended particularly on the right side and a good sized, soft, slightly tender mass extended down to nearly the umbilicus and backwards towards the right kidney. Mass was apparently connected with the liver, was smooth, regular in outline and gave the impression of fluctuation.

The fluoroscopic and radiographic examination of the stomach reveals the stomach outline smooth and regular and free from filling defects or deformities. The duodenum appears normal and the meal progresses normally throughout the intestinal tract without any evidence of pathology at any point.

Wassermann negative, blood pressure 112/82, N. P. N. 30 mg., blood sugar 100 mg., white blood

count 8,200, red blood count 4,040,000, hemoglobin 80 per cent, coagulation time three minutes.

This man was referred to one of us for exploratory laparotomy. On May 13, 1925, under ethylene anesthesia, the abdomen was opened through a high right rectus incision and on exposing the mass it was found growing from the left lobe of the liver. It was entirely free from adhesions, was at least the size of a large grape fruit, grayish in appearance and many large blood vessels were seen in the wall of the mass. It was soft and appeared to fluctuate. Gallbladder and liver (except for this tumor mass) appeared normal and no other lesion was found in the abdomen. A large trocar was inserted into the mass but nothing escaped. An incision was then made into the most prominent part of the mass, and it was found to contain a soft, grayish red tissue apparently undergoing degeneration. On running the finger around the inside of the mass there appeared to be a fairly definite wall. At this time the bleeding became quite profuse apparently coming from the wall of the mass. A large pack was inserted into the cavity to control the bleeding and after a few minutes we were able practically to clean out the whole contents of this soft tumor. It was necessary, however, to leave a pack within the cavity in order to control the bleeding. The wound was then closed leaving the pack protruding from the upper angle of the wound. On immediate microscopic examination the tumor was reported "malignant."

Unfortunately a great part of this broken down mass that was removed at this time was lost so that further microscopic study could not be carried out.

The patient's family was given a poor prognosis but much to our surprise within a few weeks the wound healed and the patient began to improve generally. His appetite was better and he gained weight rapidly. This improvement continued for over five years. This man was able to attend to his work as a fireman all this time and felt none the worse for his experience. We were rather surprised at this considering the clinical findings together with the microscopic report on the tumor.

However, on September 20, 1930 (i. e. five years later), this patient was readmitted to St. John's Hospital suffering from a recurrence of the tumor in the same location. This tumor seemed to spring up unusually quickly, as this man was under close observation all the time since the preceding operation and was examined every few months. In spite of these frequent examinations no evidence of a recurrence could be made out until a few days before admission to the hospital. Examination at this time revealed a tumor in the upper right quadrant of the abdomen at least as large as the original growth but appeared to extend higher up towards the ensiform cartilage. Not only had the tumor suddenly reappeared but this man also had a recurrence of his former symptoms, i. e., loss of weight, loss of appetite, belching of gas, etc.

A second operation was advised, and on September 25, 1930, the abdomen was opened through the old scar. There was no free fluid within the peritoneal cavity but a large tumor about the size of a grape fruit was found growing from the inferior and anterior surfaces of the left lobe of the liver. Some adhesions were encountered between the abdominal wall and the tumor and more dense adhesions between the tumor and posterior abdominal wall near the middle line. After freeing the tumor from these strictures and mobilizing the left lobe of the liver, we thought lobectomy would give this man a chance of cure. We then did a complete lobectomy (left)

with the attached tumor. Convalescence was uneventful following this operation and the patient again returned to work.

Macroscopically the tumor was roughly cone shaped and measured fifteen centimeters from apex to base, and eight centimeters in diameter with apparently four centimeters of normal liver substance attached to the base. On opening the tumor a fairly definite mass containing many large blood vessels was made out and the whole center of the mass was made up of broken down necrotic tissue, which was very similar to the macroscopic appearance of the original tumor.

Microscopic section shows a tissue that is only moderately cellular with numerous large and small areas of necrosis. The cells of tumor proper have two characteristic arrangements; cords and strands of two to three cells in thickness; nests of cells that stimulate acinar formation and closely resemble adenocarcinoma. The stroma is composed of connective tissue although in many places it has degenerated. Coagulative necrosis is quite widespread and there is a serofibrinous exudate and other areas of complete necrosis. There are many giant cells scattered through the new growth. The tumor cells resemble liver cells in their cytoplasm, in many of which it is irregular, but takes the same red staining. The nucleus is the same size as that of the liver cell, more hyperchromatic and many show active mitosis. There are many in which the metaplasia is more complete and the cells do not closely resemble liver cells. Here there is presented an epithelial type of cell, with a large amount of cytoplasm, which is clear staining and a nucleus that is divided. The giant cells are also epithelial in origin, with a large single hyperchromatic nucleus and large amounts of clear staining cytoplasm. The whole has a very vascular appearance, with newly formed capillaries spread through the section, in some places having the appearance of granulation tissue. There is a well marked connective tissue capsule on the margin.

Following the operation of lobectomy in 1930 patient showed definite improvement for a few months, gained some of his weight back and was able to work. However, about six months later the tumor reappeared, but this time apparently outside the liver in the retroperitoneal region and on the left side of the abdomen. The tumor was now definitely inoperable. Deep roentgen ray therapy gave no relief and patient gradually went downhill. He died January 30, 1932, with all the appearance of advanced carcinoma. Autopsy revealed an extensive retroperitoneal mass crowding the stomach and intestines upwards and laterally but not invading these organs. Microscopically and macroscopically this mass resembled the original tumor. The liver was free from tumor growth and showed only the old scar where the left lobe had been removed at operation. No metastatic growths were found anywhere in the body though a thorough search was made for this possibility. Apparently, at the time the lobectomy was performed the liver growth had already invaded the retroperitoneal region and was not recognized at the operation.

DISCUSSION

We believe these facts demonstrate that this tumor arose from liver cord cells and began as a single encapsulated solitary tumor, a hepatoma. Its histological characteristics were those of a partly differentiated malignancy but the encapsulation of the original demonstrated that

this is not a typical malignancy regardless of the histological picture. It resembles in these respects the teratoblastomatous growths, mixed tumors of parotid, etc.

Generally speaking, a hepatoma is clinically a benign tumor of liver parenchyma, usually single but may be multiple, well encapsulated and occurring most commonly in adults. These tumors are rare and most frequently diagnosed late in the condition. They become clinically malignant when they invade beyond their capsule. On microscopic examination they show various cytological pictures, sometimes microscopic characteristics of malignancy. The epithelial nature of the tumors and the relative slow progression allows numerous atypical patterns of growth so that these aberrations often prove very confusing. The clinical course of this patient, following the relatively late assumption of clinically malignant characters, was similar to that of other abdominal carcinomata, differing only in its duration and the absence of metastases.

634-35 University Club Building.

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HEPATOLENTICULAR DEGENERATION

Manuel Gardberg, New Orleans (*Journal A. M. A.*, Feb. 18, 1933), presents in detail the history of a case of hepatolenticular degeneration, in which the hepatic portion of the clinical picture predominated, whereas in most of the reported cases the nervous manifestations have been the more pronounced. The pathologic observations were typical of hepatolenticular degeneration, of which Wilson's disease is one form. The liver was an excellent example of advanced atrophic cirrhoses. The spleen was greatly enlarged, was slate blue, and its capsule was smooth and glistening. On section, the splenic pulp was a deep purplish red and very friable. When the skull was opened, considerable edema was found. The ventricles were found to contain a slightly increased amount of fluid. Sections through the columni and lenticular regions of the brain showed a marked increase in glial cells and fat droplet cells. The only other abnormal condition was an acute congestion of the pulmonary alveoli. The author is making complete studies of the surviving children of the patient's family.

TYPES OF ONSET IN PULMONARY TUBERCULOSIS

E. E. GLENN, M.D.

MOUNT VERNON, MO.

Until recent years the onset of pulmonary tuberculosis has been considered to be very insidious or gradual in practically all cases. The first lesion was believed to appear in the apex of the lung and by a slow process extend downward toward the base. Every effort was made to recognize the lesion before any extension had taken place. Elaborate and precise methods of physical examination were developed to detect this apical lesion, believed to precede most all chronic tuberculous disease of the lungs. When the roentgen ray came into general use slight changes visualized in the apex were given serious consideration. A ground-glass appearance of the apex or nodular lesions at times associated with striated shadows were often considered sufficient for a roentgenographic diagnosis of early pulmonary tuberculosis. Pulmonary tuberculosis with acute symptoms at time of onset was considered to be rare. Acute symptoms at time of onset, or soon after onset, were usually thought to be associated with a rapid fatal type of tuberculosis.

During the past few years the opinion of many clinicians doing tuberculosis work has changed in regard to the type of onset and the character of the first lesion most often seen in tuberculous disease of the lungs. It has been proved that the first lesion to appear in many cases has an acute pneumonic character, and that its appearance is often accompanied by acute symptoms resembling those of influenza or pneumonia. Rist¹ and other French observers as early as 1916 realized that the onset of pulmonary tuberculosis was most often acute. Rist informs us that Tripier at the International Congress on Tuberculosis held in Washington in 1908 went so far as to say that inflammatory alveolitis of the pneumonic type was the primary process in lung tuberculosis and that it always preceded the formation of true follicular tubercle. Osler² and Fishberg³ state that Kingston Fowler a pathologist in the latter part of the nineteenth century found the earliest tuberculous lesions are as a rule located in the subapical region. Apparently he said nothing of the lesion being rapidly progressive. Wesler and Jaches⁴ described initial subapical lesions in their book published in 1923. They also recognized the unstable character of the early infiltrate and stated that it was unlikely

that the more advanced infiltrations were evolved by a gradual extension from the small deposit of incipient tuberculosis. They thought it "more probable that from the beginning the disease is of greater extent, a small initial focus being rapidly converted into a large one by an irruption of tubercle bacilli into the bronchial tree or into the circulation." They felt they were confirmed in this conjecture by the appearance of roentgen shadows, which often indicate the operation of a more acute exudative process.

Although different ones had recognized the acute rapidly progressive character of the incipient tuberculous lesion of the lung, as mentioned above, widespread interest in this type of onset was not shown until after Assman published his observations on infraclavicular lesions. As stated by Douglas, Pinner and Walepor,⁵ Assman's first publication was in 1922 but his work was not widely known until after his observations were published in 1925. A review of the German literature by Douglas, Pinner and Walepor,⁵ Fishberg,³ and Fischel⁶ indicates that the observations of Assman have been confirmed and that many German writers have emphasized their importance in the pathogenesis, diagnosis, treatment and prophylaxis of pulmonary tuberculosis. Beginning with 1928 American and English writers, notably Fishberg,³ Fishberg and Shamaskin,⁷ Douglas, Pinner and Walepor,⁵ Douglas and Pinner,⁸ Zimmerli and Simmonds,⁹ Morlock,¹⁰ and Ornstein, Ulmar and Dittler¹¹ have offered additional confirmation of the characteristics of the initial infiltrations most often seen in pulmonary tuberculosis and have emphasized their importance.

As Rist has said, one attempting to study the type of onset or the character of the initial lesion by observations on sanatorium patients is placed at a considerable disadvantage because the onset usually occurred several months before admission. However, the sanatorium physician has the advantage of being able to observe a large number of patients simultaneously. Certainly the value of early diagnosis and early treatment strike him quite forcibly because of the large number of patients he observes for whom little can be done but who could have been restored to health had the disease been recognized early and the proper treatment given. Much information can be obtained from sanatorium patients concerning the onset and course of their disease at the time of their admittance. It is found that groups of patients give a history of similar symptoms at the time of onset and during the course of their disease; it follows that a knowledge of these symptoms may be of value to the physician who does not

From the Missouri State Sanatorium.

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have the opportunity to observe large groups of tuberculous patients when his services are required in diagnosis and treatment of these patients at the time of or soon after the onset of the disease.

With this idea in view I have studied the histories of 200 patients with pulmonary tuberculosis at the Missouri State Sanatorium taken in the order the patients were admitted. The extent of the pulmonary lesion has been studied as seen in the roentgenogram at the time of admittance and correlated with the history of the case. In the interpretation of the roentgenogram the extent of the lesions was classified according to "Diagnostic Standards," except that cavities were not considered. This study is similar to a portion of that made by Douglas, Pinner and Walepor.⁵ A study of this kind indicates one is justified in placing patients with pulmonary tuberculosis in three groups when the onset and course of the disease is considered, as was done by the above mentioned observers: (1) those with an acute onset; (2) those with an insidious onset with later acute exacerbations; (3) those with an insidious onset and course.

ACUTE ONSET

As mentioned, much evidence has been submitted by different observers in several different countries during the past few years in sup-

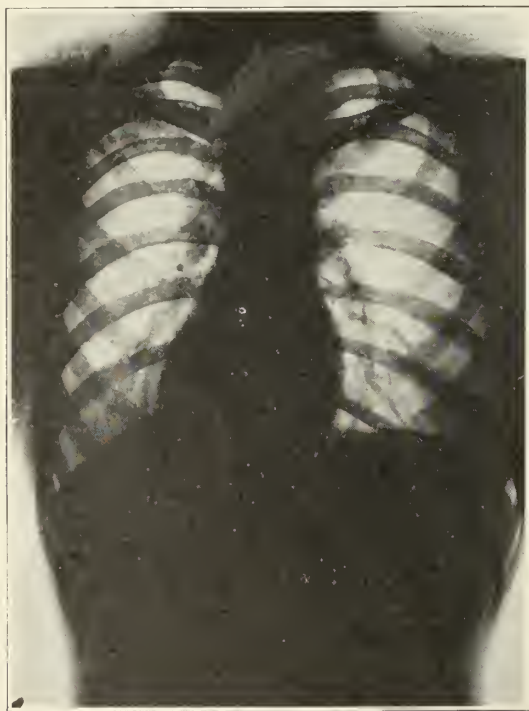


Fig. 1. Early acute pneumonic infiltration in left subapical region, most dense near the lateral chest wall.



Fig. 2. Acute pneumonic infiltration right upper lobe; clear 11 days prior to making this roentgenogram; chill with high temperature 9 days before; artificial pneumothorax with one year duration on left side.

port of an acute onset in a majority of cases of pulmonary tuberculosis. A pneumonic lesion is the first to present itself and is most often present in the subapical region near the posterior and lateral chest wall (fig. 1). The lesion is often lobar in extent (fig. 2), as mentioned by Rist¹ and other French observers. The formation of this lesion is usually accompanied by symptoms similar to those seen in a severe cold, influenza or even bronchial or lobar pneumonia. Hemorrhage, at times profuse, often occurs with the symptoms of acute onset. If the lesion is near the surface of the lung there may be pleural manifestations. If the initial lesion is small no physical signs may be present as its most frequent location is in the posterior and lateral subapical region which is covered by thick shoulder muscles. If the lesion involves all or a great portion of a lobe, or if the lesion is near the surface, there is usually impaired resonance, alteration of breath sounds (usually a decrease) and there may be fine or medium moist rales after cough. The physical findings are very unreliable at the time, however, and extensive lesions may be present, even large cavities, with no distinctly abnormal physical signs. On the other hand, the roentgen ray findings are usually striking. An area of infiltration is easily visualized, which may be limit-



Fig. 3. Nodular apical type of infiltration; insidious onset with duration of illness 4 years; serial roentgen rays show no change; blood picture normal.

ed to the subapical region (fig. 1) or may be lobar in extent (fig. 2). Although the initial lesion is usually in the subapical region, most often the right, it may appear in any part of either lung; but all observers agree that it is seldom found in the apex. The patient usually raises a small amount of sputum during the acute episode and if it is examined tubercle bacilli will often be found.

The acute symptoms usually subside after a few days or a few weeks and the patient is usually of the opinion that he has had an acute cold or influenza and his physician often has the same opinion. The patient notices that he is not so strong since the acute attack and a slight productive morning cough usually persists. The pulse and temperature may be within normal range. The exudative lesion may resolve completely after a few weeks or a few months, as observed by Ornstein, Ulmar and Dittler.¹¹ I am inclined to believe that the resolution of the acute infiltration is more likely to occur if the diagnosis is made and proper rest treatment given. More often the infiltration remains and shows much the same appearance after the acute symptoms have subsided as were shown while they were present. However, cavities may be formed or enlarged during this period of apparent quiescence and the involved lobe decrease in size. A few weeks or even months after the acute onset a similar

acute attack may occur. Hemorrhage is more likely during the recurrent attacks. The acute attacks may not recur and the constitutional symptoms, such as afternoon elevation of temperature, night sweats, loss of weight and anorexia, gradually appear or become intensified. Constitutional symptoms such as these were formerly thought most often to accompany the formation of the initial lesion. The acute onset was often considered to be an influenza or an acute cold which was followed by tuberculosis thought to begin when the constitutional symptoms first appeared.

Patients seldom find their way to a sanatorium before this stage is reached. At the time of admittance, most all with a history of an acute onset show extensive infiltration, often with a spread to the lower lobe or to the opposite lung. Ninety-five, or 47.5 per cent, of the 200 patients studied by me gave a history of an acute onset (table 1). This agrees quite well

Table 1. *Onset and Course*

Type	Number of Patients	Per Cent of Total
Acute onset	95	47.5
Acute onset; later acute exacerbations	56	28.0
Insidious onset and course	56	24.5

with the 52.5 per cent of Douglas, Pinner and Walepor⁵ and the 48 per cent of Dudan and the 50 per cent of Blanche as reported by Rist.¹ Thirty-two of the 95 with an acute onset gave a history of not being strong since an acute respiratory disturbance thought at the time to be influenza. Twenty-two gave a history of having had a hemorrhage during the first acute attack. Eighty-two, or 86.2 per cent, of those with a history of an acute onset had disease more than minimal in extent. The average duration of illness of the group with an acute onset was 14.8 months compared to an average duration of 30.6 months of the group with an insidious onset (table 3). These statistics indicate that the disease of the group with an acute onset extends rather rapidly to the advanced stage and that disease which has a tendency to spread usually does so comparatively fast.

INSIDIOUS ONSET WITH LATER ACUTE EXACERBATIONS

Many of the patients whose tuberculous disease begins with an initial acute pneumonic

Table 2. *Extent of Involvement and Average Duration of Each Group*

Extent of Involvement	Number of Patients	Per Cent of Total	Average Duration in Months
Minimal	45	22.5	36
Moderately advanced	86	43.0	23.7
Far advanced	69	34.5	18.5
Total	200	100	24.7

Table 3. *Average Duration and Extent of Disease for Three Types of Onset*

Type of Onset	Number of Cases	Average Duration in Months	Extent of Disease					
			Minimal		Mod. Adv.		Far Adv.	
			Cases	Per Cent	Cases	Per Cent	Cases	Per Cent
Acute	95	14.8	13	13.8	48	50.5	34	35.7
Insidious								
later acute	56	21.4	9	16.	23	41.	24	43.
exacerbation	49	32.5	23	47.	15	30.6	11	22.4
Insidious								

lesion have no acute subjective symptoms when the lesion first appears. These patients give a history of malaise and tiring easily several days and at times several weeks before the acute symptoms appear. At times there is a history of a slightly productive cough. The acute symptoms are of the same nature as those described as occurring during the initial attack in the group with an acute onset. Patients with these symptoms were classified by Dudan according to Rist¹ as having sudden onsets preceded by slight prodromal symptoms and by Douglas, Pinner and Walepor⁵ as those with an insidious onset with later acute exacerbations. I have used the terms of the last mentioned authors in my classification. Twelve per cent of Dudan's group, 23.5 per cent of the group of Douglas and his associates and 28 per cent of the cases studied by me gave a history of symptoms of this character. It is most likely that the initial lesion is smaller and less acute than that present when the acute onset is the first evidence of disease. A logical explanation of the later acute symptoms is that a bronchogenic spread occurs from the initial lesion into other parts of the lung. After the occurrence of the acute episode the course of the disease is much the same as that in the group with an acute onset.

INSIDIOUS ONSET

As mentioned in the first part of this paper, it was formerly thought that the onset was gradual or insidious in practically all cases of tuberculous disease of the lungs. Although we know the onset and course is not insidious in most cases, many patients are seen who give no history of acute febrile attacks. It is believed that many of these patients have an initial lesion of an acute inflammatory character, which causes no subjective symptoms at the time of onset or thereafter until slight constitutional symptoms occur. These lesions may gradually extend and prove dangerous to the patient if the disease is not recognized and proper treatment given. It seems logical that the lesion which is less acute will progress less rapidly. This as-

sumption is supported by the fact that 49 patients who gave a history of an insidious onset had an average duration of more than twice the duration of those with an acute onset; also, that the per cent of minimal cases in the group with an insidious onset was three times as great as the per cent of minimal cases in the group with an acute onset (table 3). Douglas, Pinner and Walepor⁵ have shown that disease with an insidious onset and course is usually of apical type and that the lesions progress slowly, if at all.

NODULAR APICAL INFILTRATIONS

The nodular apical type of tuberculosis is relatively benign as has been observed by Fishberg,³ Fischel,⁶ Douglas and Pinner⁸ and others. It does not seem likely that progressive tuberculous disease often develops from this type of lesion. Twenty-four patients, or 12 per cent of the group studied, had this type of lesion (fig. 3). In no case was any change seen in these nodular apical infiltrations in serial roentgenograms. A serial roentgenographic study of the chest is of great value in the determination of the activity of a tuberculous lesion, as has been stressed by Kettelkamp.¹² Only three of the 22 patients, or 12.5 per cent, gave a history suggestive of an acute onset. As these patients gave a history of having had an acute respiratory infection on an average of four months before admission, and the roentgenograms showed evidence of a nodular apical lesion with the appearance of long duration, it is not believed that the acute symptoms were tuberculous in origin. Patients with this type of lesion who find their way to the sanatorium often have an introspective or neurotic trend. Often a slight elevation of temperature is present, but the blood picture is normal unless other infectious processes are present to account for the abnormality.

CONCLUSIONS

1. The onset of pulmonary tuberculosis is often acute and the lesion often becomes extensive soon after the onset.
2. The most frequent location of the initial lesion is in the subapical region. It may be lobar in extent. The upper lobes, especially the right, are most often involved.
3. A study of the history of tuberculous patients together with their roentgenographic findings at the time they were admitted to the sanatorium, indicates that the disease of the group with an acute onset extends rather rapidly to the advanced stage.
4. The acute onset of pulmonary tuberculosis is often mistaken for influenza or other acute respiratory disease.
5. Acute subjective symptoms may not ac-

company the formation of the initial acute pneumonic lesion but develop several days or a few weeks later.

6. The tuberculous disease of the lungs with an insidious onset has a tendency to progress slowly.

7. The nodular apical type of disease is usually benign and is seldom the beginning of extensive tuberculosis.

Missouri State Sanatorium.

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DISCUSSION

DR. SAM H. SNIDER, Kansas City: We should remember in our studies of tuberculosis that tuberculosis is not a matter of a month, or six months, or a year or two. The infection is probably acquired, as I, and some others, believe in early childhood. In most cases I believe it is acquired from kissing by the parent or some individual who has tuberculosis, a bit of the expectoration coming in contact with the child's lips and causing the infection.

We have the early or juvenile type of infection which affects only the lymphatics and the hilus of the peribronchial lymphatics. This is not a striking infection and perhaps gives few or no symptoms. The individual carries the infected gland into adult life and then some day it ruptures into the bronchus, tubercle bacilli are carried into the bronchus and massive atelectasis occurs with spread of the tuberculosis and that is my understanding of the acute type of onset. There are other types that evidently are going on right along. In the insidious type in which the disease spreads by the lymphatic channels alone, we may have few or no symptoms. The disease spreads very slowly; it may have negative physical findings, but it should be studied by the roentgen ray. Physical findings, history and roentgen ray findings should all be considered, when we have a history of chronic cough and expectoration, fever and tachycardia, and loss of weight and strength. With that triad of symptoms we must consider the diagnosis tuberculosis until we have proved it is something else. If the physical examination is negative we take the roentgen ray and the sputum examination, but the sputum examination is very deceptive. A negative sputum ex-

amination means nothing whatsoever in diagnosis. It simply means we did not find the bacillus. The bacilli are not present in great numbers in the sputum unless there is an open ulcer somewhere along the respiratory tract. According to Corper of Denver, there must be 100,000 bacilli per cubic centimeter before they are found in the sputum examination.

I have enjoyed the doctor's paper very much. Such studies as this bring home to us that tuberculosis has certain definite manifestations and that we should be alert to watch for them in order to make an early diagnosis. To make an early diagnosis in a chronological sense does not necessarily mean an early diagnosis of pathological manifestations. You saw Dr. Glenn's classification of early, moderately advanced, and far advanced. We must learn that although the diagnosis may be early in a chronological sense the disease may have been going on for twenty years.

PYOGENIC INFECTIONS OF THE TERMINAL PHALANX

WITH SPECIAL EMPHASIS ON PROPHYLAXIS
AND TREATMENT

J. G. PROBSTEIN, M.D.

ST. LOUIS

Infections of the hand continue to constitute a large part of the practice of surgery. Trivial as these cases may seem in their onset, one is greatly impressed with the seriousness of the condition when the end results are investigated. Any one working in an outpatient clinic or in the clinic of a large industrial plant is impressed with the importance of proper prophylaxis, diagnosis and treatment. The purpose of this paper is not to advance any new form of treatment but to emphasize the necessity of regarding these cases as real surgical problems. It is striking to note the difference in the periods of disability, end results and decrease in expense to the individual when the case is intelligently treated. Industry and commercial enterprises soon learned the dangers of this type of infection and have inaugurated the best form of treatment. This has been done in many states by the enforcement of laws which carry regulations making it compulsory for every employer with an injury to the hand, irrespective of how trivial, to go to the hospital immediately for treatment.

To illustrate the importance of hand infection I quote some statistics published by insurance companies.¹ In 4971 accidents 654, or 11 per cent, became infected; 75 per cent of disability from hand injuries follows hand infections; 90 per cent of hand infections reports late and after infection has developed; 75 per cent of hand deformities is the result of hand infections. Of all hand accidents, it is esti-

¹From the Surgical Clinics of the Washington University and Jewish Hospital.

mated that 65 per cent requiring disability is the result of minor injuries becoming infected; 35 per cent requiring disability is due to other injuries. It is important to note that it is the trivial injuries such as scratches, abrasions and splinters, when neglected contribute the greater percentage of subsequent serious infections. It is not common to see a large laceration or extensive injury to the hand become infected, probably because the patient immediately seeks medical aid and the proper care is at once instituted. Minor cases as a rule go unnoticed and medical aid is not sought until infection has developed.

In the industrial clinic that I am associated with every trivial injury must be reported to the hospital at once. Our prophylactic treatment requires the use of tincture of iodine for all abrasions or lesions open to infection. We have found this very satisfactory inasmuch as the number of infections seen in our clinic is held to a very small percentage. In this clinic which takes care of approximately 50,000 cases a year of which infected fingers constitute a large percentage being as high as 15 per cent one year, we have not lost any fingers, limbs or lives as the result of infection in the last four years. Contrast this with the cases we meet in the outpatient departments of the Jewish and Barnes hospitals where the individual frequently gives a history of some minor injury. The great majority of these cases resorts to the usual home remedies as compresses, salves and poultices. They are brought to the physician only when the pain from the infection has become too severe to endure or when treatment by the family physician has not brought relief from suffering.

In a series of cases reported from the out-clinic of Washington University in 1926 covering a period of ten years, 473 cases were admitted under the diagnosis of abscess, cellulitis, paronychia and furunculosis of the finger,² approximating 4 per cent of all cases admitted to the surgical department. Forty per cent had been treated by outside physicians without improvement or relief from pain. In many of these patients the fingers had been incised five and six times without relief and in no instance had a general anesthetic been used.

Omission of general anesthesia probably accounts for the greatest percentage of failures in treating infections of the hand. It is not hard to conceive the difficulty of incising an infected finger that is throbbing and painful and expect an adequate incision, without anesthesia. In our experience the patients are only too glad to be relieved from the intense pain from which they are suffering and readily submit to anes-

thesia. The localized paronychia, sometimes called eponychia or epoparonychia, an infection which tends to localize in one particular section of the nail groove, is one of the few infections of the finger that we feel may be dealt with under local anesthesia. As a rule, these infections are easily drained by lifting the eponychium and incising the roof, inserting a small rubber tissue drain and applying a wet pack for twenty-four hours. The same may be said of superficial blebs, being sure to remove the entire roof of the bleb so it will not spread beneath. In epoparonychia, it is a mistake to obtain drainage by incising from above downward by going first through the skin and tissue before the pocket of pus is reached. The generalized paronychia, or so-called "run around," which we treat by lateral incision and flap as recommended by Kanavel, should be opened or incised under general anesthesia. It is important when treating a paronychia or epoparonychia to determine whether or not a subungual abscess or infection has occurred. If infection has set in removal of the proximal loose portion of the nail is absolutely essential to cure this condition. Otherwise, the drainage will frequently be inadequate and result in a chronic paronychia. When removal of the nail is necessary care must be taken not to destroy the matrix. Auchincloss³ states that, "In this type of infection which undermines the nail, the key to the cure in this situation lies in the adequate and proper removal of the proximal part of the nail."

Felon, or whitlow as it is sometimes called, is too often improperly handled in spite of all that is said concerning this condition. This infection is usually of staphylococcic origin. It can usually be confined to the terminal phalanx and cured without permanent impairment to the patient. Every precaution must be used to prevent the infection from spreading to the palm, tendon and joint which, of course, makes an undesirable complication. Patients in our dispensary are usually encountered under one of two conditions, either (1) after four or five days of home treatment with loss of sleep, or (2) after the finger has been inadequately incised without improvement. If the finger has not already been incised, one must determine if the infection is ready for incision and drainage; in other words, has pus formed and is it walled off? How is one to make this decision? The number of days that the infection has been present and the palpation findings are guiding features. When, on palpating the infected phalanx, we find a definite area or localized point of tenderness one can be reasonably certain of pus. As a rule, this point of tenderness

is in an area of the finger other than that which inspection of the phalanx would have you believe. You do not wait for fluctuation. If uncertain as to whether the infection is ready for incision we feel it is safer to err on the conservative side rather than to incise and obtain a serous or nonsuppurative discharge; this in our opinion is an indication that the incision was made at an incorrect time. We advise that a hot saline or boric pack or hot soak be administered, the limb elevated and medication given for relief of pain for another twelve hours.

When we have decided that surgical intervention be instituted the first step is to inform the patient that a general anesthetic, preferably nitrous oxide gas or ethylene, must be administered. Too much emphasis cannot be placed upon the importance of this fact. It has been our experience that attempts at local anesthesia by spray give unsatisfactory results in the great majority of cases. Blocking the nerves at the base of the fingers has not met with much favor because the patient is not in the mood to have this swollen painful finger manipulated for the use of hypodermics. To quote Harry E. Mook,⁴ "The gas machine is one of the most valuable instruments in the treatment of infected fingers."

The next important step is the application of a tourniquet; for this we have found the ordinary sterile rubber band most satisfactory. It keeps the field free from blood so that inspection of the infected area is most satisfactory. The question as to type of incision has recently been somewhat divided. Christopher, Kanavel and Auchincloss rather advocate the hockey stick incision. We have been using the inverted U for the last ten years and have found it most acceptable. The advocates of the hockey stick incision think the inverted U incision leaves the patient with a scar that interferes with tactile sense. We feel, however, that if the inverted U incision be properly carried out so the incision is placed close to the nail, when it reaches the tip the resulting scar does not interfere with the pulp of the finger and its tactile sense. Another advantage of the inverted U is that the finger is opened and the field of exposure is far more satisfactory, if osteomyelitis is present, for incising the periosteum if desired (Christopher).⁵ Care must be taken not to invade the tendon attachment and joint. As a rule, we do not attack the bony structures having found that nature handles the majority of these bone involvements most satisfactorily. These two incisions are the ones that are recognized as standard. In spite of all that has been written and said, we continue to

see fingers incised through the median line of the palmar aspect of the terminal phalanx. Not enough can be said against this procedure and it is only mentioned here to be condemned. A through and through rubber drain is placed in the terminal phalanx being held in place by sterile adhesive. A wet saline or boric pack is applied and the finger covered with oiled silk and elevated on two pillows. The patient returns to bed and within a few hours it is surprising to note the amount of relief from pain. The finger is not dressed for 24 hours and the drain is removed on the second or third day.

After the drain has been removed we use sterile adhesive as the dressing over the incised portion. It allows free drainage, is removed with ease daily and does not macerate all the tissue in the finger as does the continuous hot pack. The patient is given a daily soak in saline for 30 minutes. The finger is then subjected to dry heat for 30 minutes and the ambulatory dressing applied. If osteomyelitis does not develop, the patient is usually discharged in two or two and one half weeks. If osteomyelitis does develop or is present, the wound continues to discharge until the sequestrum of the terminal phalangeal bone is completely separated and thrown off through the discharging sinus. Removal of the sequestrum is not as a rule another surgical procedure. When these fingers are incised correctly and properly osteomyelitis is an infrequent occurrence. As soon as we are certain that the acute infection has subsided sufficiently, attention must be turned to restoration of function. This we start toward the end of the first week of treatment.

A word of caution regarding streptococcic infection of the finger should not be omitted, viz; occasionally the virulence of the onset of this infection with elevation of temperature and chill may deceive the physician and lead him away from the proper course and treatment. One should never begin early active surgical intervention unless one is absolutely sure that pus is present. As a rule, cases of this type of infection recede and get well under conservative measures of elevation, heat and rest. This lymphatic infection should never be incised until one is certain that pus is present and localized.

CONCLUSION

1. It is the minor scratches and trivial injuries that are of great importance in the etiology of infections of the finger and hand.
2. The proper early prophylactic treatment of trivial injuries is most valuable in preventing real surgical infections of the hand.

3. When infections of the finger present themselves they should be considered as major surgical problems.

4. It is impossible to incise properly a felon or major infection of the terminal phalanx without a general anesthetic.

5. The early restoration of the finger to normal function is of great importance and should not be left to the patient.

405 Lister Building.

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POLYDACTYLIA

GEORGE GELLHORN, M.D.

ST. LOUIS

A short time ago I delivered a young woman of her first baby; it had six fingers on one hand and six toes on each foot (figure 1). This fetal anomaly while not exactly common is not sufficiently rare to justify the publication of a single new case. In this particular instance, however, there is this added point of interest, that I had attended the older sister of this patient who also had six fingers and toes and gave birth to two children with supernumerary fingers and toes. This familial occurrence with its special significance warrants a brief excursion into the subject of polydactylia.

In most cases the reduplication of fingers or toes occurs on the outer edge of the affected extremities. In the dozen or more babies whom I have observed personally the thumb was doubled only in two cases. One of these is depicted in figure 2. It is seen that the doubling is caused by a split or fissure in the bone. Even more infrequent is the duplication of the middle finger, as shown in figure 3 which I owe to the courtesy of Dr. L. R. Sante. In the other instances where the supernumerary digit was on the outside of hand or foot the duplication assumed one of three forms: (1) a mere cutaneous appendage with or without an ossified center, connected by a thin pedicle with the little finger or toe; (2) a well formed finger or toe with a well defined focus of ossification at-

tached to the adjoining normal phalanx by a cartilaginous process but not interfering with any articulation (figure 1); (3) a perfectly normal sixth finger or toe participating in every respect in the anatomical arrangement of the hand or foot (figure 4).

The removal of the deformity ranges from a simple tying and cutting off of the pedicle to a more or less complicated operation, as in the case of a split phalanx. The corrective intervention can be undertaken in the first few months of life and as a rule leaves no permanent scar.

The technic of the surgical procedure, which has to be varied according to the roentgen ray findings, is of much less interest than the explanation of the origin of the anomaly. What causes this excess of fingers or toes, is usually the first question the laity puts to us. It was formerly assumed that some external agent, such as amniotic bands or cramped space within the uterus, was responsible for polydactylia as well as syndactylia, that is, the growing together of digits thus reducing their normal number. More recently, however, the science of genetics has placed the emphasis on an internal factor, namely, heredity. The hereditary nature of the anomaly has been proved by a large statistical material.

There is, first, the accumulated occurrence of such deformities in various members of one and the same family. This fact alone eliminates the probability of accidental sources and points to a single inherent cause. In the case here presented, not only the three babies but also one of the mothers exhibited supernumerary digits. In addition, at least ten members of this family, namely, great-great-grandfather, great-grandfather, grandfather and his brothers, two uncles, an aunt, the mother and one brother, had the same deformities.

Unfortunately, my patients could not give me sufficiently exhaustive information to prepare a family tree. Such a genealogical study is the second method to prove the hereditary character of polydactylia. The literature, however, supplies us with a fairly large number of such investigations. Thus, Kemp and Ravn¹ present the complete pedigree of a family of 140 indi-



Fig. 1

Demonstration at a meeting of the medical staff of St. Luke's Hospital.

From the Department of Obstetrics and Gynecology, Washington University School of Medicine.



Fig. 2

viduals in six generations of whom 41 were afflicted with anomalies of hands or feet. Mayer² quotes the observation by Devays according to which in a certain French village where intermarriage had been the prevailing custom for many years, practically all the inhabitants had six fingers; the anomaly did not disappear until marriages were contracted with men and women from other places.

Finally, the problem has been approached by way of animal experimentation. Bagg³ exposed thousands of mice to roentgen rays and found in the offspring among other deformities of the extremities many cases of polydactyly which remained hereditary for several generations.

Twelve years ago, Danforth⁴ very cautiously suggested that polydactyly "probably" was of hereditary origin. That probability has now become an established fact. To express it in simplest terms, this means that the germ plasm of one or the other parent contains something which has the faculty of producing peculiarities, such as extra fingers. In the specific case here demonstrated, it is obvious that this something must reside in the chromosomes of the egg cells of the two sisters.

That inbreeding is in some cases one of the ultimate causes of polydactyly we have already learned from Mayer's quotation. If two persons, each with polydactyly, or two members of polydactyl families, marry the incidence of the anomaly in the offspring will be very high

and probably follow closely the Mendelian law. Other inciting causes are likely to be discovered in time to come.

In a case observed by me a year or so ago the parents were first cousins. They had had nine children. All confinements were difficult because of a generally contracted pelvis. Eight babies died; one is alive but imbecile and has Little's disease, possibly due to a hard forceps delivery. When I was consulted some time during the tenth pregnancy, I counselled cesarean section so as to give this long-wanted child a better chance to survive. The operation was performed and a living baby extracted without complication. This baby had six completely developed fingers and toes on each extremity (figure 4) and was otherwise apparently normal, but died within a very few days of a congenital heart disease.

This case illustrates the well known fact that polydactyly is often associated with malformations in other parts of the body. The instances where reduplication of digits occurs in perfectly normal individuals and uncomplicated by other anomalies are decidedly in the minority. In all other cases, however, polydactyly must be considered a sign of degeneracy in the parents or children. Such a deterioration need not always be very pronounced. I have failed in the past to pay close attention to the general condition and antecedents of the patients with polydactyly but shall do so in the future when cases of



Fig. 3



Fig. 4

this kind come under my care. In the present instance the two young women seem perfectly normal mentally; physically, both present a marked asthenic habitus which, of course, is a subnormal type of human constitution. The baby presented tonight was born fully four weeks before the expected date; and premature childbirth which occurs without tangible causes suggests some inherent weakness in the mother and portends a somewhat doubtful prognosis for the child.

The study of the literature yields a large number of observations which point to polydactyly as a stigma of degeneration. Kemp and Ravn, to choose but one example, enumerate the postmortem findings in a baby of five days as follows: Polydactyly; congenital atresia of the vagina; bilateral hydronephrosis; fibro-adenoma of the larynx; epiglottis bifida. The mother who was married to a first cousin had suffered from epilepsy for the past ten years. The father himself was healthy but had two psychopathic brothers. The grandfather was a chronic alcoholic and had had several attacks of delirium tremens.

That the multiplicity of malformations in widely distant parts of the body is no mere coincidence is attested by Bagg's experiments.³ This author found in his mice with polydactyly numerous instances of club feet, blindness, ab-

sence of one or both kidneys, and anomalies in liver and testicles.

The most pronounced picture of degeneration is found in the so-called Laurence-Biedl syndrome, which is characterized by adiposity, retinitis pigmentosa, mental deficiency and polydactyly. This complex of symptoms fortunately is rare; less than forty cases have been reported to date.⁵

SUMMARY

A new-born is presented which exhibits six fingers on one hand and six toes on each foot. The mother's sister was born with six fingers and six toes and in turn gave birth to two children each of whom showed the same anomaly on hands and feet. In the rest of the family polydactyly has been found in at least thirteen individuals in six generations. Genealogical studies in the literature and animal experimentation clearly indicate that polydactyly is an hereditary phenomenon the ultimate cause of which resides in the germ plasm. Polydactyly is often associated with physical deformities in other parts of the body and mental deficiency. The general practitioner probably has better opportunities to observe this anomaly and to ascertain its occurrence in preceding generations than the specialist has. By following up his cases and recording his observations in print with particular reference to the later development of children with polydactyly he can render valuable service to the new science of genetics.

Metropolitan Building.

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LUNGS OF CHILDREN WITH ASCARIS

A. E. Keller, H. T. Hillstrom and R. S. Gass, Nashville, Tenn. (*Journal A. M. A.*, Oct. 8, 1932), present observations which suggest that in children who are infested with *Ascaris lumbricoides* and who show no response to tuberculin tests the widening in the hilar areas with increase in the bronchovascular markings are possibly due to the repeated migration of ascaris larvae through the lungs. They may occur either as a result of the damage done by the larvae themselves or as the result of infection by microorganisms which invade the pulmonary tissues at the time the larvae escape from the blood vessels into the alveoli. The changes seen on roentgen examination, which have been attributed to the migration of ascaris larvae, are similar to those seen in the childhood type of hilar tuberculosis and may also resemble the changes which occur following repeated nonspecific infections of the lungs.

CARE OF THE BREAST DURING PREGNANCY AND PUERPERIUM

FRED EMMERT, M.D.

ST. LOUIS

Breast feeding is the most urgent single need of the baby, and many of the complications in both mother and child during the nursing may be avoided by the intelligent care of the breasts before and after delivery.

There are many factors which influence the amount of milk secreted by the mother, the most important one probably being the individual characteristic of the mammary gland. For example, the observation is frequently made that the breast of one side secretes much more than does the other. Conditions which seem to affect the activity of the breasts are, the age and parity of the mother, environment, including hygiene and diet, and the size and demands of the offspring together with the manner in which the infant nurses. Other conditions surrounding the actual nursing tend to depress or promote milk secretion as, for instance, pain from sore nipples or engorged breasts, or on the contrary, the satisfaction and pleasure which may be associated with a normal act of nursing. Every possible care should be exercised in order that the baby may be satisfactorily nursed and sore nipples and breast abscesses prevented.

Special care of the breasts and nipples during the prenatal period is usually not necessary. Daily washing of the nipples and areola with soap and water and protection against



Fig. 2. Manhattan breast binder. Breasts supported by raising them upward and toward the median line. First strap applied below breasts; second strap above breasts; third strap lower margin of one breast to upper margin of other breast, and fourth strap opposite third. (Beck, *Am. J. Nursing.*)

pressure are, as a rule, sufficient. However, if the breasts secrete, crusting may be prevented by covering the nipples with sterile gauze and vaseline. During the last two months of pregnancy in addition to the daily cleansing of the nipples, they should be thoroughly dried and anointed with sterile liquid petrolatum. This protects the nipples so that they are less likely to crack when the baby nurses. Washing the nipples with alcohol and other astringents to harden them should be avoided.

It is frequently observed early in pregnancy that the nipples are small and depressed or inverted. In the average case as pregnancy advances the nipples enlarge and become everted. There are instances, however, in which the nipples remain inverted leaving the breasts useless for nursing unless treatment is instituted. The use of nipple aerators (figure 1) sewed into the brassiere help evaginate the nipples. Since repeated manipulation carries with it possibilities of infection it does not seem advisable for the patient to make traction on the nipples to aid in the development. Cracked and fissured nipples are seldom encountered if this routine of cleanliness and protection is carried out.

MANAGEMENT OF THE POSTPARTUM BREAST

Even though every precaution has been taken to have the breasts in the best possible condition during pregnancy the postpartum care of the breasts is of still greater importance, for it is during this period that they are frequently a source of trouble.

Immediately after the delivery attention should be given to the care of the breast. Each breast should be washed with a weak castile soap solution and dried with sterile gauze. A sterile towel should be placed over the breasts and held in place with a breast binder.

The baby is not put to the breast for at least eight hours following the delivery, for the

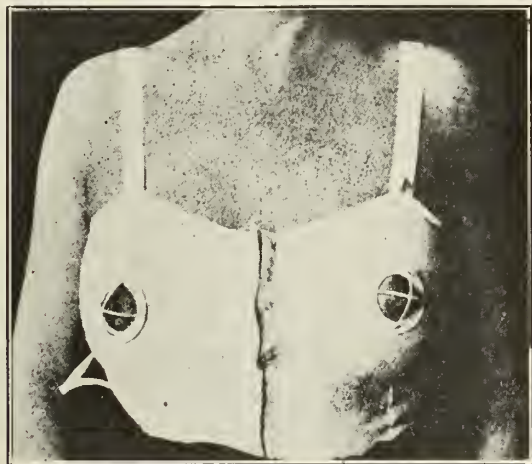


Fig. 1. Nipple aerators sewed into the brassiere prevent and cure inflammatory nipple troubles by evaginating the nipple and permitting application of the open-air method of treatment. (Manufactured by Becton Dickinson Company.) (Moore and Dennis.) (Gellhorn: *Progressive Medicine.*)

Read at the 75th Annual Meeting of the Missouri State Medical Association, Jefferson City, May 23-26, 1932.

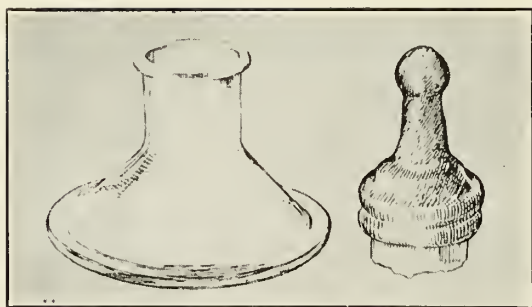


Fig. 3. The Sloane Hospital nipple shield.

process of labor has been a strenuous ordeal for both mother and child and each needs a well earned rest. During the following two or three days little or no nourishment is obtained from the breasts, and in order to prevent injury to the nipples the baby is allowed to nurse only every six hours and not longer than five minutes. Thus, only ten minutes of nursing on each breast is permitted daily. After the milk comes in, feedings are given every four hours lasting for fifteen minutes.

Cleanliness of the nipple is maintained by washing it before and after each nursing with small sterile cotton balls soaked in boiled water. During the intervals between nursings a small piece of sterile gauze is placed over the nipples. This prevents irritation and absorbs any milk which may ooze out.

ENGORGEMENT OF THE BREASTS

Commonly, about three or four days after the delivery the breasts become distended and frequently painful, due to the increased lymph and blood supply, the production of milk, failure of the supporting structure or connective tissue and action of gravity. In the majority of cases, this excessive engorgement may be relieved by the proper support of the breasts, supplemented by nursing. A binder is used to hold the breasts perpendicular to the chest wall and directly in front of the mother. Very little pressure should be made against the chest wall so that there is no compression of the mammary glands and no obstruction to the ducts or twisting of the nipples.

It is important to know the proper time to apply the binder. On about the fourth day of the evolution of the nursing breast and just before the milk becomes plentiful, the breasts become firm and painful. It is at this time that the binder is applied and kept in place until after the seventh to the ninth day. With the patient lying flat on her back, with the head in the same plane as the body and the arms extended above the head, an assistant supports the breasts by raising them upward and toward the median line. The first strap is applied be-

low the breasts, extending from one side of one breast to the opposite side of the other breast. The lower edge of this strap is just below the lower margin of the breast. The second strap is applied in a like manner just above the breasts. A third strap is extended from one breast at the thoracomammary fold to above the other breast and attached to the upper and lower straps so as to suspend the breast. Another strap is then applied in a similar manner but in the opposite direction. Finally, a fifth strap is used in the median line extending from below upwards (figure 2). The adhesive should be about two and one half inches wide.

With the breasts properly supported by the Manhattan breast binder and without too great pressure, the relief to the patient is almost instantaneous. It is rarely necessary to resort to the use of codeine, ice-bags and the restriction of fluids to relieve the engorgement, the above routine usually sufficing. If the engorgement of the breasts shows no signs of subsiding within twenty-four hours, and particularly when the child is unable to draw off a sufficient quantity of milk, an electric pump may be used. Many authorities advocate attempting to empty the breasts by massage. It seems reasonable, however, that the use of too forceful measures is wrong as they stimulate rather than diminish the secretory activity of the glands.

DRYING UP THE BREASTS

On the other hand, at times it becomes necessary to dry up the milk, as in cases of stillbirths, tuberculosis, anemia or any condition where nursing would jeopardize the health of the mother. Fluids are restricted, saline cathartics given for two successive days and a firm, tight binder applied. Ice-bags properly used (never place ice bag directly over the breast but to either side and over sternum) and perhaps a sedative are sufficient.

TENDER AND FISSURED NIPPLES

Painful and cracked nipples are usually the result of unduly long suckling and lack of

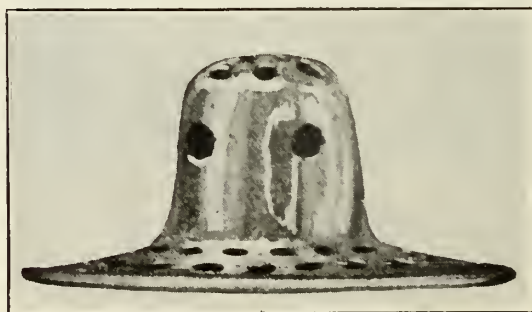


Fig. 4. Ziegler's aluminum shield.

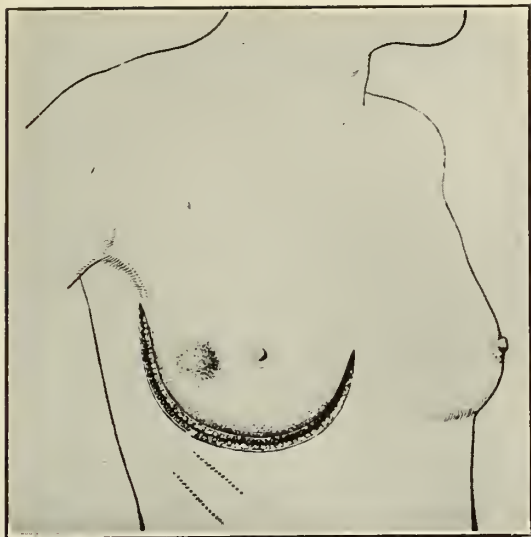


Fig. 5. Bardenheuer's incision made in crescentic direction around base of breast.

cleanliness. In the majority of cases, if the above routine of prophylaxis has been followed during the latter months of pregnancy and the puerperium, there is little need for active treatment of fissured nipples. However, the nipples should be minutely inspected daily and if small fissures appear a nipple shield (Sloane's, figure 3) should be used. Partial rest may be favored by this means without interfering with the function of the breast, which is so important at this time. Between nursings the painful nipples are kept covered with either the lead or the perforated aluminum shield of Ziegler (figure 4). Silver nitrate or the various ointments are not necessary since this treatment if properly carried out completely heals the fissures.

MASTITIS

Inflammation of the lactating breast is a fairly common complication of the puerperium, the incidence being 4 to 5 per cent of all parturient women. Abrasions, excoriations, fissures and malformations of the nipple and areola undoubtedly serve as avenues of infection to the lactating breast and explain the high per cent of the disease among primiparae whose tissues are less resistant to the trauma incident to nursing. Mastitis frequently appears from eight to fourteen days after a lesion of the nipple has disappeared, so that the danger of mammary inflammation does not end with the healing of the crack or fissure of the nipple or areola.

Regarding the location of the inflammation most cases belong to the intramammary variety. Nonglandular mastitis generally affects the sub-areolar or subcutaneous tissues, the retromammary form being quite rare. Intramammary mastitis may involve any part of the paren-

chyma but in one half of all cases the lower outer quadrant of the breast is involved.

The ordinary type of an intramammary infection is characterized by slow evolution. There is a tendency to widespread extension of the infection and abscesses develop late in the course, if at all. There is severe pain, irregular fever with a dusky red discoloration of the overlying skin and marked tenderness on pressure. In the diffusing type of mastitis, the inflammation spreads rapidly, attacks the surrounding glandular tissue by degrees and if not treated eventually transforms the entire chest into a series of intercommunicating abscess cavities.

The subcutaneous type of mastitis begins as a lymphangitis in the areola or adjacent tissues. The inflammation often remains localized as an ordinary cellulitis and terminates in abscess formation, the abscess being situated in the subcutaneous tissue. Cases of this kind are usually preceded by a fissure or crack of the nipple that gives rise to pain on nursing before the signs of inflammation are present. The tissue of the areola or the skin adjacent to it becomes swollen and reddened. Pain, throbbing in character, is present; swelling and tenderness of the axillary lymph nodes often appear soon after the onset of the inflammation.

Prophylactic treatment, if used promptly, will obviate surgical intervention in most cases. Upon the first appearance of any signs of inflammation of the tissue, the breast is raised and supported with adhesive straps, as described above, ice-bags are applied and 10 c.c. of sterile milk is given intramuscularly in the gluteal region. This foreign protein treatment should be repeated every third day. Nursing, as a rule, is interrupted only for a few days.

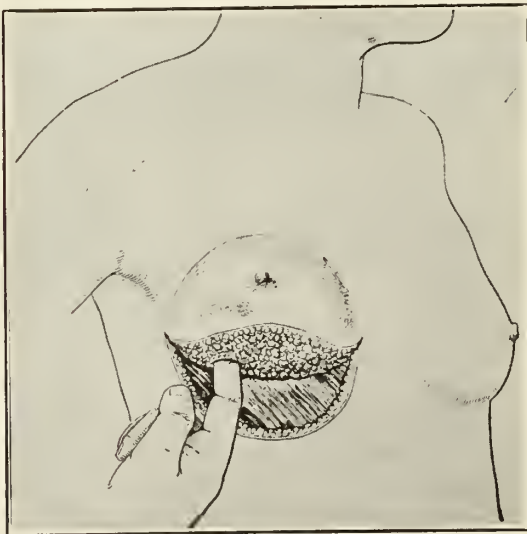


Fig. 6. Abscesses opened from beneath breast.

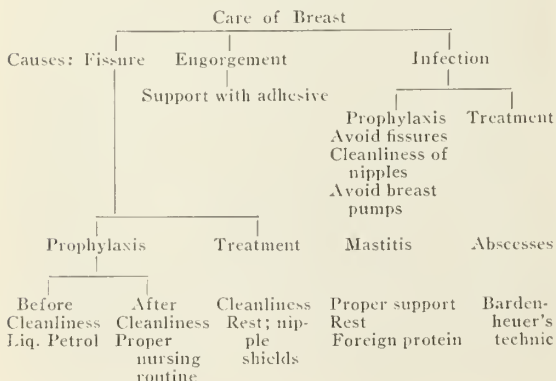
TREATMENT OF MAMMARY ABSCESS

In a subcutaneous abscess a single incision usually suffices. In this case it is unnecessary to explore the abscess cavity, a small piece of rubber tissue being sufficient to insure adequate drainage. The after-treatment consists in frequent renewals of the dressing, which should be kept moist for several days to facilitate drainage. Irrigation of the abscess cavity is usually unnecessary. The breasts should be supported in a suitable suspensory bandage. An intramammary abscess is best taken care of by the Bardenheuer incision (figure 5). This procedure consists in making an incision in a crescentic direction around the lower base of the affected breast. The breast is then lifted up and the abscesses are opened from beneath (figure 6). It must be remembered that the rami perforantes of the mammary artery, which enter the gland near the sternum, are of great importance for the nutrition of the breast; therefore, the breast should not be too far dissected off the pectoralis fascia on the median side. Even if only one upper lobe is affected this incision gives excellent results.

In the after-treatment, the entire wound cavity is loosely packed with gauze soaked in a 10 per cent (i. e. hypertonic) salt solution. This packing is removed after two or three days and then renewed daily. Moist compresses with physiological salt solution are applied and changed twice a day. Under this treatment, granulations appear very promptly in the abscess cavities. The wound should be closed by secondary suture.

In the last four years on Dr. Gellhorn's service 13 cases of breast abscesses have been treated by the Bardenheuer technic. It is far more effective than the incision through the tissue of the breast with through and through drains. In three to four weeks the wound is entirely healed, the function of the mammary gland has not been disturbed and the scar is invisible.

SUMMARY



713 Metropolitan Building.

SANENESS IN MAINTAINING
PHYSICAL EFFICIENCY

GEORGE A. SKINNER, M.D.

COLONEL, MEDICAL CORPS, U. S. ARMY

OMAHA, NEB.

With each succeeding year it becomes increasingly apparent that the task of the medical man is primarily that of preventive medicine. Of necessity, there will always be ample need for corrective and curative measures, but methods that tend to remove causes of sickness, to prevent injuries and forestall physical disabilities are coming more and more to the front.

That physical efficiency is paramount to any marked degree of success does not admit of argument. There have been a few notable examples of success in spite of physical handicaps, but they are comparatively very few. With physical disability usually comes the necessity of retirement from the chosen calling. Therefore, methods that tend to prolong useful activity, and thereby the happiness and contentment of individuals, are well worth the consideration of the medical profession. Perhaps no body of men are greater slackers in maintaining their own physical efficiency than the doctors themselves. This is not because they do not know the needs, but either they think themselves too busy or they are simply careless of their own welfare. The subject of physical efficiency is probably more impressed upon those of us who are in the military service than upon those in civil practice because we must be physically fit when we enter the service and must keep so at all times; it is as much a part of our job to be physically ready for field activity at any moment as it is to be prepared professionally to give high class medical service. Any deficiency, physical or mental, is at once noted and if not corrected, we have the opportunity of seeking other employment. In my opinion something of the same sane recognition of the absolute need of physical fitness should be adopted by the medical profession and by them passed on to their clientele. This would result in a real forward step in physical betterment of the entire population.

There may be all sorts of physical sins of omission and commission in youth and we seldom have much trouble with them. Nature has endowed the youthful body with such a high factor of safety and elasticity that it can get away with almost anything. But as the body grows older and the deposit of lime salts commences to reduce its elasticity, the problem is entirely different.

Read before the St. Louis Medical Society, February 21, 1933.

When does such a period come? Naturally, it is almost as variable as are mental and physical characteristics in people. Apparently, some are always old; others never seem to have age show much upon them. From a great number of observations, however, a fair norm has been established; further than this each individual must determine his own case or have it determined for him by expert advice.

By general consent we speak of people as young until about the age of 35, then in young or late middle life until about 60 and old after that age. It is therefore possible to have old young men and young old men, but these are exceptions.

Little thought is usually given to physical maintenance while in the period of youth, although damage is perfectly possible during this period, even though there is a high elasticity and reparative power. Overexertion may damage the heart of youth and lack of physical exertion may cause more or less muscular degeneration. These are the rare problems and concern us only occasionally. With the advent of mid-life, however, physical problems often become vital. Most men at this time have reached their greatest period of productivity, and successful men are very busy. They usually plan to keep physically fit, but various business and social activities absorb the time required for exercise, and so it is postponed with increasing frequency as the years go on. Our present mode of living makes it so convenient to ride, that to walk any place seems the height of folly, as it is considered lost time. Thus has come about the vicious but common method of trying to crowd a whole month's exercise or at least that for a week into a single afternoon or evening. The present vogue of combining business with meals has resulted in many men greatly overeating at noontime. If they would restrict the other meals in proportion to the overfeeding at the noon hour, the balance might be maintained. But most of us feel greatly abused if any one suggests that we diminish the quantity of food taken. We swear by all that is holy that we only eat exactly what is needed to maintain us, yet the expanding waist lines, the thickening necks and doubling chins seem to throw some doubt on the accuracy of the statements at times. Given a man who is very busy, who is overweight and feels the need of "catching up" on his exercise, and potential trouble is in sight. He may take the afternoon off and play 18 holes of golf or maybe 36 for good measure. He probably goes home pretty well exhausted, is lame and tired for two or three days, but mentally he is at peace with himself because he feels that it has been beneficial to him. The question is, has he been benefited or harmed by this al-

leged physical training. He may not have been much damaged, but such concentrated activity is never beneficial and often productive of serious strains. The body has lost to some extent the power of quick adjustment to sudden loads and this great overload brings an undue strain on the heart, which sometimes results in a real dilatation. Another method of attempting to concentrate the omitted exercise for months past is found at the annual vacation. This applies particularly to enthusiastic hunters and fishers. For some unknown reason, men otherwise reasonable will not give a thought to the necessity of preparing physically for a hunting or fishing trip. They will have every preparation for filling every moment of the time, accurate trip connections, complete outfits, guides and all necessary for the most complete realization of long cherished dreams. But these same men will without any preliminary physical preparation reach the selected point, where possibly a long hike, horseback ride, or canoe trip is necessary at the outset of the vacation, and undertake to keep up with a physically perfect guide who lives his life in the open. This may not be a variety of suicide but it certainly approaches it, and it is probable that among those here assembled many can recount cases of serious or possibly fatal physical damage that has resulted from just such lack of physical preparation for strenuous and prolonged body strains. In my experience there have been several such.

It is not even meant to suggest that men in middle life should cease their pleasurable vacation hunting and fishing trips. The writer is fully in sympathy with the joys of hunting and fishing and all other sports and out of door activities. The whole purpose of this presentation is to call attention again to the need of a sane and relatively continuous training for such events; also to keep before us the necessity of a regular and frequent period of physical activity so that the body may be always ready for a sudden strain and be able to absorb it, like a well tempered spring, without damage. In case of middle aged men who have been long out of training an excellent preparation for physical activities may be made without damage if it is done in a reasonable way. Naturally the "intensive" training has no place in such a program. The activities should be so planned that the muscles are brought back into normal activity and tone in a gradual manner, and so without damage. Such a problem was presented to the writer at the beginning of the World War. The task was to take a group of civilian doctors assembled in one of the Red Cross groups and together with the personnel of 200 enlisted men, prepare them for the se-

vere duty of the field in actual war, and do it in the shortest time compatible with efficient results. Base Hospital No. 19 was organized and fairly well equipped when I reached Rochester, N. Y. Here I found an unusual personnel assembled from the flower of the profession and of the youth of Rochester. But it was an untrained and uncoordinated group, so it was something of a task to make it into a cohesive and efficient organization. There was no worry about the physical training of the young men, for many were college athletes, and all were above average in physical development. With the professional group there was an entirely different problem. All were successful doctors, from well established practices mostly, and from middle life to comparatively recent graduates in medicine. I had no concern as to their professional training as it was uniformly excellent and in a few cases superior. But to get them to using their muscles again and capable of enduring any hardships that might be their lot in serving at the front was the immediate and insistent problem. We were quartered in the armory, a large and well arranged building, and used this for the beginning of our physical training, as it was midwinter and a severe one even for central New York. The command was organized into four companies of fifty men each and the younger field and junior officers were assigned to these. The personnel was informed of the objective of the training and what would be expected of each of them in the early spring so that they could use their own judgment as to the course of preparation each might need in addition to the routine established for the command. Some of the older men had become so accustomed to the use of automobiles that they rarely walked much over a block at one time, and this only to get into the auto. But they were game and went at the preparation with intelligence and determination. As the spring began to open the roads we sent out the companies for short hikes of five or six miles and advised the senior officers to accompany them as often as possible. It became popular to take these hikes, and not only the command but many of their friends went along. Then a band volunteered to go with us to make it more cheerful. As the command became hardened the distance was extended until 20 miles was no exceptional hike, and it was a cause of much unfavorable comment and unmerciful "razzing" if any one fell out. So the training progressed until the last hike, just before embarking for France. We took this under full pack for 26 miles, and not a man nor officer fell out. My own opinion is that there was not a better physical organization that landed in France

than the personnel of this hospital. The training was kept up consistently on the transport on the way across and they proved their preparation many times in their subsequent service. One of the officers, a neuropsychiatrist, told me after the training period was over and he had successfully accomplished his assigned task with the command, that he did not at the beginning believe such a result was possible as he had become considerably overweight, had not exercised at all for a number of years and had never been much inclined toward physical activities. He said further that he had not felt so well in years and was sure that the training had added at least ten years to his life.

Intensive training may be successful perhaps in handling youth but it is not in any sense adapted to the needs of older men and should be considered only to be avoided. It is not difficult to visualize the damage that may be done to middle aged men taken from sedentary occupations and without preparation placed in strenuous physical training lasting hours daily. Such training is certain to result disastrously to a fair percentage of the men; whereas, if the training comes on by slow stages, giving time for readjustments and muscle building, there will be practically no harm. Such a course or method of training for physical strains will prepare not only the physically sound but will do much to improve the physical efficiency of the handicapped.

Examples of strenuous physical activities in to advanced life are not particularly rare and nearly every gymnasium boasts of at least one man who is playing handball or tennis at seventy or more years of age. The wisdom of any man much past fifty indulging in such active sports may be questioned, but when they do and with no apparent damage over a long period it is almost without exception because they have never been out of training and have in that way maintained a high degree of physical excellence much longer than the average period.

The medical profession has a great opportunity for service to the public in bringing to it the need of a much more consistent method of keeping physically fit. Everyone is interested in maintaining himself in the best possible condition, and many more will do it if it can be made to appear to them more worth while. But so many seem to be of the opinion that an occasional period of exercise is all that is necessary to accomplish this end that it is difficult to get across what are the real facts. Advertisements of certain mechanical apparatus that is supposed in twenty minutes a day to completely replace every form of physical exercise, and other

equally absurd claims for systems and machines, have convinced a fair number of people that physical movements are unnecessary and archaic. Taking exercise by proxy has also become fairly common; a man attending a baseball or football game and taking a more or less active part in the "rooting" while he consumes his peanuts and "hot dogs," feels that he has had a good day's exercise.

If we can convey the idea that with all the mechanical advancements and ease of accomplishing difficult tasks, the body has not changed but requires a reasonable amount of care and attention to maintain it in the best condition; that muscles to be elastic and resistant must be used; that the use of these muscles should be consistently spread out over the entire year and not crowded into a short period of intense activity; that the heart is a muscular organ, and a mighty powerful one, but that it can be overworked and strained beyond repair; that ordinary common sense and saneness is essential in maintaining physical efficiency, the medical profession will add greatly to its already intensely practical position in our modern civilization.

Army Building.

THE INDEFENSIBLE USE OF MORPHINE BY THE MEDICAL PROFESSION

G. WILSE ROBINSON, JR., M.D.

AND

PAUL A. JOHNSON, M.D.

KANSAS CITY, MO.

During the past few years the officials of the American Medical Association have become interested in the relation of the profession to drug addiction. This interest has been crystallized by lay criticism and by pressure upon our legislative bodies to restrict the profession's access to and use of opium and its derivatives. A commission was appointed to investigate this situation. They selected various outstanding practitioners to discuss the indispensable use of narcotics in their specialties. The results of this inquiry were published by the American Medical Association in 1931.⁴

Most of these physicians have ignored the cause of the criticisms and have simply poured forth, once more, the necessary indications of morphine and other opiates. While all have mentioned the dangers of their use, the medical profession has come unscathed through this latest investigation.

⁴Read at the 75th Annual Meeting of the Missouri State Medical Association, Jefferson City, May 23-26, 1932.

We have been mindful of this problem, due to the large number of addicts we are called upon to relieve in our private practice. A large percentage of these patients are business and professional men and women, where the factor of association with other addicts is slight. It has been impressed upon us that the medical profession has been responsible for the beginning of many addictions through ignorance or laxity and, in many cases, dishonesty. Also, certain individuals have been willfully kept in the clutches of this habit by unscrupulous physicians. Thus, while we appreciate the indispensable properties of this most valuable therapeutic aid, we likewise appreciate the indefensible misuse of one of humanity's worst enemies. It is our purpose to point out, by a survey of a series of our addicts, the cases where lack of knowledge and indifference have played a part, hoping by this means to arouse the sluggish minority of our profession.

In our hospital work we average twenty-five cases of morphine addiction a year. Our last fifty consecutive cases have been analyzed for this report. We have found that twenty-eight (56 per cent) of this series received their first dose from a physician, fifteen from association with other addicts and in seven the history was vague. Eight of the twenty-eight had received morphine for incurable painful conditions, nine were given the drug during an illness but its use might have been avoided, and in eleven cases the attending physician apparently failed to exercise precaution against addiction. Thus, the addiction in 40 per cent of our cases might have been avoided by proper precautions by members of the medical profession. Twenty-two per cent of the entire series received the morphine from physicians in the absence of any illness. We are of course cognizant of the fact that the statements of addicts cannot be taken at their face value and that some will wrongly accuse a physician. But we have carefully weighed all histories, asked for details and wherever a doubt has arisen we have placed the case in the group of doubtful etiology. But we have also found that a few patients defend the doctor and we believe these two factors will balance each other.

Our figures do not agree closely with those of the United States Public Health Service. They estimate that 40 per cent received the first dose in medical treatment. The variation of 16 per cent between our figures and those of the Public Health Service is probably due to the class of patients we see, since most of our cases come from homes where the factor of association, thrill seeking and bravado plays a relatively

small part. But, using the Public Health Service figure of 40 per cent and our analysis that 70 per cent of all addictions caused by the therapeutic use of morphine could be avoided, then the physicians of this country are needlessly responsible for 28 per cent of all cases of drug addictions in the United States, or twenty-eight thousand.

There are twenty-eight thousand morphine addicts in the United States today who can say, "If my doctor had been more careful this would not have happened to me." A terrible indictment. It is time physicians removed their heads from the sand, realized the dangers and after-effects of thoughtless opiate therapy, and corrected this condition. "Once a drug addict, always a drug addict," is not far wrong. Once a weak personality—and morphine addiction is evidence of a weak personality—finds an aid such as an opiate he will always turn to its use in times of stress; under its influence he will sacrifice anything to procure it, and long-founded habits of right thinking are gradually broken down. The individual suffers a deterioration of body and mind that is most distressing to witness. While cures give temporary relief to all and permanent relief to some, 80 per cent of our cases were repeaters. The newer methods of psychotherapeutic approach have helped many but it is uncertain. The only solution is absolute prevention, through knowledge and care by physicians and surgeons.

We believe this condition can be remedied by a more careful study of the pharmacopeia in search of substitutes, and by a more careful consideration of the individual's personality so that susceptible patients will not be given morphine. We can best illustrate our point by an analysis of the type of patients we have treated. Without a doubt, there are certain personality factors associated with every addiction. Of the twenty cases where the use of morphine was unwarranted, nine were alcoholics, three had had repeated operations and four complained of chronic illness of which we could find little evidence. The four other cases were physicians who were unable to sleep and used the drug because of its accessibility. To us, repeated operations, a history of alcoholism or overemphasis of symptoms, point to instability of personality. No well adjusted person cares to be a chronic invalid, and repeated calls regarding trivial and minor symptoms indicate an abnormal state of mind that should warn the physician against any habit-forming preparation. When patients return for operation after operation, suggest diseases that might need surgical attention and submit without objection to prolonged hospitalization, the surgeon must be wary. The use of

excessive amounts of alcohol, like morphine addiction, is proof of maladjustment. Eighteen of our fifty cases gave a history of alcoholism. Do not give morphine to an alcoholic except to save his life; it is better that less complete relief be obtained by other drugs than to risk the inception of morphine addiction. To warn physicians against the use of morphine to relieve their own insomnia would seem unnecessary but many still experiment, to their sorrow.

It is self-evident that there would be no morphine addicts if the first dose of morphine were not given. Therefore, the first dose is the important dose and when apparently of necessity it must be given the patient's reaction to that dose is a definite index to its subsequent use. Therefore, first, do not give a single dose of morphine unless it is an absolute necessity; second, if the patient shows by his reaction to the drug that he seems to derive some psychic pleasure from it, dwells upon its effect and asks for more, the physician should realize he is dealing with a potential addict; third, do not give larger doses than the needs demand; personally order every dose and stop its use as soon as possible.

The first suggestion followed rigidly will prevent about 70 per cent of all morphine addictions for which the doctors are responsible. We all know morphine is indicated preoperatively in many instances. It is indicated in angina pectoris and in many cases of severe abdominal colic. It is usually needed in acute traumatic conditions for the control of pain and shock. There are other indispensable uses but these will serve as examples. However, it is the opinion of Wood,² Tice¹ and others that careful study of the patient and the use of substitutes will render the first dose of morphine unnecessary in many cases. Likewise, we agree with them that the routine use of morphine in any specific disease entity is inexcusable.

There are other conditions for which it is commonly prescribed where its use is indefensible. Severe insomnia, mania, toxic delirium and alcoholism are indications to some physicians; nervousness is another. The routine use of narcotics in these cases will almost invariably lead to addiction and they should not be used until all other substitutes have failed. Insomnia, alcoholism and functional nervousness indicate an improper personality background and should warn the doctor against the use of morphine.

The patient's reaction to the initial dose of morphine given for the relief of pain is important. Every doctor knows that his patients respond differently to similar painful conditions. The more pronounced the reaction of

the patient to pain the more unbalanced we consider the personality. When a physician doubts his patient's statement he must be on guard and rely entirely upon objective signs in gauging the further use of morphine in that particular patient. It has been said that morphine given for relief of pain will never lead to addiction. This may be true, but let the physician satisfy himself absolutely that the pain is entirely organic and not exaggerated by the mind. Weisenburg and Richardson³ state that without exception all addicts they have treated were unable to withstand even mild physical discomfort. We do not imply that this exaggeration always results from a craving for the drug; a patient may not know what he is receiving—morphine has not occurred to him—but he is so constituted that he cannot withstand pain. This fact is indicative of a personality disturbance. The doctor must use extreme care and judgment with such individuals.

The use of morphine to control the pain of incurable or chronic conditions, such as inoperable malignancies, inoperable spasmodic conditions, osteomyelitis, etc., is the duty of the physician. These unfortunates need every aid to make life bearable. The doomed patient should be helped from this life as comfortably as possible and the thought of addiction should never disturb the professional conscience. We do not recommend withdrawal for this type of patient; but when the dose becomes too large careful treatment will make it possible to reduce the amount required, thus lowering the cost and building up the patient's ego so the personality does not suffer too much degradation.

From this discussion it is apparent the patient's personality is the determining factor in morphine addiction. The neurotic, the constitutionally inferior, the criminal and the malingerer reach for an aid in their distress and hold to morphine permanently after they have once experienced its effect.

The contributing factor is the lax physician who prescribes an opiate on the least provocation. Wood² says that morphine is used much more frequently and in larger quantities for the relief of pain than is necessary. Weisenburg and Richardson³ sum up the relation of the physician to a patient with pain in such an excellent way that we wish to quote these remarks in full:

Some physicians frequently resort to the administration of habit-forming drugs for the alleviation of discomfort in their patients, while others seem to prescribe them rarely for the same type of patient. It is evident that the narcotic therapist views pain and discomfort only as a symptom of physical disease and fails to comprehend that such a symptom is a reaction to life. Such a doctor seems to forget that, in addition to the physical mechanism, there is a per-

sonality experiencing pain in accordance with an individual mental attitude, and that sensibility to discomfort is, to a large extent, determined by the adaptability of the patient. The physician who prescribes the minimum of a narcotic has, on the first approach, equally impatient, fretful and complaining patients, but he is able to desensitize them to their discomfort by what some of the patients have described as "his manner." Such a physician is able to bring into the mind of the patient the faculty of facing a problem and adjusting himself to it. He understands life and puts the patient's mind sufficiently at rest to endure the pain. He understands that there is a personality, in addition to the physical condition, and treats it. One physician thus absolutely fails to use discretion in the administration of narcotics and is the type that tends to make the use of such drugs essential to the patient. The other physician—the only one competent to prescribe narcotics—is, to a degree, able to find a substitute for them.

Thus, if our physicians will attempt psychotherapeutic measures, the first dose will be given seldom and failing to prevent this, they will use minimum doses at very infrequent intervals.

In addition to this psychic approach, many substitutes can be used which either are not habit-forming or form habits that are easily broken. For pain, the coal tar products when used properly are very efficient. They may be combined with codeine, which increases the efficiency of both preparations. Codeine is not habit-forming. A most efficient prescription for acute head pains, arthritic conditions, etc., is codeine grains one, acetylsalicylic acid grains ten, as needed. There are many other similar combinations.

The barbiturates, chloral and paraldehyde, with or without the bromides, are much more efficient than morphine in combating insomnia and toxic deliriums. The most efficient combination for severe insomnia is chloral hydrate and potassium bromide, of each fifteen grains; extract of hyoscyamus and extract of cannabis, of each one eighth grain, in combination with one of the barbiturates. We have found paraldehyde surpasses all other preparations for an immediate effect in toxic states, especially that of alcoholism, but paraldehyde addiction is quickly produced and it should never be used longer than thirty-six hours and with great caution.

The bromides, especially the organic salts and the milder less toxic barbiturates, such as phenobarbital, slow the excessive activities of the brain known as nervousness. The opiates have no place in the treatment of the neuroses and of nervous temperaments.

If physicians will use the above substitutes, or their own favorites, before they resort to morphine and when forced to use the drug give minimum doses, much of the criticism leveled against the doctors will be answered because our responsibility will be negligible.

We have devoted no space to our own criminals. They are rare but ever present. The narcotic bureau is working against them and we should cooperate whenever possible. They are the worst type of criminal, money mad, who fasten a habit upon a man in the name of therapy in order to live upon his anguish. We can think of no phrase strong enough to denounce them.

SUMMARY

The medical profession as a whole uses care in prescribing opiates but too many use them unthinkingly and indiscriminately in therapy. Proper consideration of the personality of the patient and the use of substitutes will avoid many unpleasant situations. Psychotherapy, as practised by all true physicians, will relieve much discomfort and calm the patient so that opiates will seldom be necessary. Whenever an opiate is required, the doctor should use small doses at infrequent, irregular intervals. He should never allow a strange nurse unlimited freedom in the administration of narcotics in his name, as many will abuse it. He should personally order every dose; he should treat every dose of morphine as a potential "death dealer" and should give the first dose only when all other steps have failed. Then the present wave of criticism will subside into a barely audible ripple.

1432 Professional Building.
8100 Independence Road.

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DISCUSSION

DR. E. E. MANSUR, Jefferson City: What provisions have been made toward taking care of the floaters that come to all of us? Up to about six years ago I did not have a doctor's emblem on my car; then I put one on. I had not been robbed for two years before that but within a week my car was robbed. I put another kind of emblem on, but in two months it was robbed again. These addicts see the emblem and know it is a doctor's car. I think on an average of at least once a week an addict comes to my office and pleads for narcotics. What are we to do with them? It ought to be possible to call a Federal officer and have them arrested and investigated. I have not done that, but these people are potential crooks and robbers and for their own safety and the safety of society some provision ought to be made to take care of them.

DR. G. WILSE ROBINSON, JR., closing: I do not know what the situation is in the smaller towns. Of course, if a man uses narcotics without a doctor's prescription he is liable to arrest by the Federal authorities for violation of the Harrison Act. In Kansas City the county authorities send them to the farm

for sixty days and they are allowed to sweat out their sentence. The Federal penitentiary at Leavenworth has established a precedent in taking care of violators of the Harrison Act and is doing splendid work.

As to the floaters, if you want to take the trouble to prosecute them you can have them sentenced but most of us do not want to appear as the prosecuting witness. However, I think if we would do this once or twice we would not be bothered with morphine addicts. They know who will not bother them and they know to a certain extent some of the doctors who will take care of them. In our office they know that while we treat addicts regularly we do not bother with floaters and we practically never have one come in and ask for a prescription; but of course in the smaller towns it is different—they go where they see the doctor's sign. It is a matter you have to struggle with yourself if you want them taken care of.

CONSERVATISM IN TONSILLECTOMY

JOHN ZAHORSKY, M.D.

ST. LOUIS

It is not so much for my own justification but rather to emphasize the value of the practitioner's observations that attention is called to my article on "The Remote Results of Tonsillectomy,"¹ which was read before the pediatric section of the A. M. A. and which was not very kindly received at that time. The conclusions then expressed were so radically opposed to the prevailing enthusiasm about tonsillectomy that my advice fell flat. In this article from a study of 150 cases of children who had their tonsils removed, I offered certain conclusions, and these are herewith paralleled with those of Kaiser² who studied several thousand cases. The parallels follow:

Z. Suppurative rhinitis, probably due to sinus disease, often occurs after tonsillectomy.

K. Attacks of sinusitis are somewhat more frequent in the children whose tonsils and adenoids have been removed.

Z. The removal of the tonsils does not prevent middle ear disease.

K. A decreased incidence of about 4 per cent is found in the children with tonsils and adenoids removed.

Z. The predisposition to bronchial inflammation is not changed.

K. This condition occurred somewhat more frequently in the children whose tonsils had been removed.

Z. Tonsillectomy increases the tendency to bronchial and pulmonary infections.

K. Pneumonia occurred more frequently in children whose tonsils and adenoids were removed.

Z. The removal of tonsils and adenoids by no means prevents the occurrence of cervical adenopathy later.

K. This condition occurred in 7 per cent of tonsillectomized children and 14 per cent of those used as controls.

Z. Rheumatism and heart disease are not prevented by tonsillectomy.

K. Chorea and recurrent attacks of rheumatic

fever were not influenced by removal of the tonsils, although the first attack of rheumatic fever and heart disease occurred less commonly in tonsillectomized children.

Z. We cannot depend on tonsillectomy alone, as a rule, to improve the nutritional condition.

K. Malnutrition occurred in nearly as many children whose tonsils and adenoids had been removed as those who had not undergone operation.

The great difficulties in making a true evaluation of tonsillectomy will be appreciated by reading the exhaustive study of Selkirk and Mitchell.³ Hundreds of cases have been reported merely on the basis of a *post hoc, ergo propter hoc*. No therapeutic measure can be generally accepted on this ground unless the disease for which it is instituted has a definite and well-known clinical course.

In studying the recent literature I am glad to find that the tonsil question is becoming in the main a pediatric question in which the age of the child, the family history, the previous history, the susceptibilities and immunity of the child must be considered. A complete physical examination, urine and blood examination should precede every operation. In every case I ask the question, What has been done medically to improve the condition of the throat? If nothing has been done, it is well to wait. We use tonics, iodides, vitamins, out-door life, and even vaccines, and wait. Often the local and general symptoms disappear. This waiting policy is uniformly adopted in all children under six years of age.

The conservation of the tonsillar structure in the young child I think is becoming the generally accepted practice. The indications for tonsillar removal are gradually being restricted, but even these are still not very definite. The following, in my judgment, are *not* indications for removal of the tonsils and adenoids: Anorexia, recurrent vomiting, frequent colds, malnutrition, otitis media, nasal sinus disease, mastoid disease, bronchitis, enlarged cervical glands, acute tonsillitis, acute laryngitis, asthma, rheumatism, nephritis—unless the local condition of the tonsils or adenoids shows evidence of persistent enlargement or infection which our clinical judgment declares irremedial by medical means.

The enthusiasm for tonsillectomy as a great prophylactic procedure has happily died out. For a while, it seemed that this operation would become almost as popular as circumcision in boy babies.

In advising this operation the Hippocratean maxim, "Do good, or do no harm," must be our guiding principle. In the young child, to advise the operation because it *might* do good is insufficient; for as the operation itself shows

and the subsequent history of the child sometimes reveals, you may do harm.

536 N. Taylor Avenue.

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THE DIFFERENTIATION OF TRUE DIABETES AND PSEUDODIABETES

B. Y. GLASSBERG, M.D.
ST. LOUIS

Since the discovery of insulin in 1922 there has been a considerable increase in the number of cases of diabetes. For example, in Missouri between the years 1923 and 1929 the total death rate increased about 8 per cent but the death rate from diabetes increased almost 70 per cent during the same period. It cannot be doubted that this increase is more apparent than real because interest has been so focused upon the disease. During the past few years I have found a not inconsiderable number of persons referred for diabetic management because of the presence of a copper-reducing substance in the urine. From the historical viewpoint it is noteworthy that since the introduction of alkaline copper sulphate, about 1840, as a means of testing for sugar in the urine, innumerable writers have insisted that the presence of a copper-reducing agent in the urine does not indicate the presence of diabetes. Unfortunately, there is

Table 1. The Blood Sugar Level at Which Glycosuria Occurs

True sugar in mg. per 100 c.c. capillary (arterial) blood	Number of cases in which glycosuria did not occur at this blood-sugar level		Number of cases in which glycosuria just occurred at this blood-sugar level		Number of patients
	Non-diabetic	Diabetic	Non-diabetic	Diabetic	
Above 250 mg. per cent	2	1	0	13	16
249 to 225 mg. per cent	2	2	2	7	13
224 to 200 mg. per cent	7	2	4	3	16
199 to 175 mg. per cent	10	5	7	6	28
174 to 150 mg. per cent	*	*	5	5	10
149 to 125 mg. per cent			3	6	9
124 to 100 mg. per cent			1	4	5
Below 99 mg. per cent			8	3	11
Total cases	21	10	30	47	108

Table 1 shows the level above the commonly accepted renal threshold for glucose reached without glycosuria in nondiabetics and diabetics, and the level at which glycosuria (judged by Benedict's method) just occurred. Cases of renal glycosuria are not included. The true sugar is 20 mg. per cent lower than that obtained by the older methods.

From the author's article, "The Renal Threshold for Glucose in Diabetic and Nondiabetic Persons," J. Lab. & Clin. Med. **16**:948, 1931.

* It is generally considered that glycosuria does not occur in this blood sugar range.

Read at the 75th Annual Meeting of the Missouri State Medical Association, Jefferson City, May 23-26, 1932.

widespread disregard of this tenet. Joslin estimates that a sixth of the persons referred because of glycosuria do not have diabetes. For these reasons it may be worth while to discuss the differentiation of true diabetic glycosuria from that harmless form here designated as pseudodiabetes.

There are some seventy chemicals which when present in the urine reduce copper. In this paper, however, it will be considered that glucose is the agent responsible for reduction. Table I shows the blood sugar level at which glycosuria occurs. It was made after an examination of several hundred glucose tolerance curves in which the renal threshold could be determined with some accuracy. It is self-evident that the presence of sugar in the urine gives no indication of the level at which it may be present in the blood. A diagnosis of diabetes can only be made by an examination of the blood to determine its sugar content.

The method here proposed is not infallible but I believe it offers accuracy as great as that given by any of the commonly used laboratory procedures. The method consists of the use of the old-fashioned glucose tolerance test carried out according to a strict technic. The interpretation is somewhat different from that hitherto used.

TECHNIC

The patient comes to the office or laboratory in the morning without breakfast and after a fourteen hour fast. He lies upon a cot for an hour's preliminary rest and remains upon it until the completion of the test.

0 hour. Beginning of bed rest. The bladder is emptied and the urine discarded. Two glasses of water are drunk.

Fifty-five minutes. Fasting blood* and urine samples taken for sugar determination.

One hour. 100 grams glucose made up to a volume of two water glasses and flavored with the juice of one lemon quickly drunk.

Two hours. Blood and urine samples taken for sugar determination. Two glasses of water quickly drunk.

Four hours. Blood and urine samples taken for sugar determination. Test completed.

INTERPRETATION OF THE CURVE

In response to the ingestion of glucose insulin is secreted by the pancreatic islets. The rate of

*Only when the fasting true** blood sugar is above 175 milligrams per 100 c.c. of blood is a diagnosis of diabetes mellitus made and the test omitted.

**True blood sugar is determined by Somogyi's method. The figure obtained is about 20 mgs. per cent lower than that obtained by the more commonly used Folin-Wu method. With the latter technic, nonsugar and nonfermentable reducing substances are determined as sugar—an error which is avoided by the Somogyi method.

secretion may be prompt or slow, the amount of secretion may be adequate or inadequate to metabolize the ingested carbohydrate. If inadequate, a curve typical of diabetes is obtained. I feel that if the beginning of secretion is delayed, even though finally adequate, a high one-hour and a low three-hour blood sugar value will be obtained. On the basis of available evidence glucose is still being absorbed from the intestinal tract at the same rate at the end of the three-hour period as at the beginning; if this be

Table 2. Interpretation of Blood Sugar Curves After Glucose Ingestion

Classification	Mgms. of Sugar in 100 c.c. Blood		
	Fasting	One Hour	Three Hours
after 100 gms. glucose			
Adequate Insulin Secretion			
Prompt secretion, low normal	80	95	70
Fairly prompt secretion, medium normal	80	150	80
Delayed secretion, high normal	80	270	120
Potential Diabetics			
Usually found in obese persons; must be treated for obesity and as diabetics	{ 135 135	270 270	60 120
Inadequate Insulin Secretion			
Typical diabetic	80	230	250
Typical diabetic	135	270	210
Typical diabetic	200	390	470
Glycosuria may occur at any of the above blood sugar levels; by itself it has no significance.			

true, then the excess sugar must be held back, largely in the liver, if the insulin secretion be adequate. According to this conception an amount of sugar which at the one-hour period is not being deposited in the liver because of the inadequacy of insulin secretion at that time, is being deposited there at the three-hour period.

In case of doubt as to the proper classification of the patient he is allowed to continue on a diet limited only by prohibiting easily assimilable sugar (granulated sugar, cake, candy, etc.). If obese, and most of the doubtful cases are obese, reducing measures are inaugurated. The test is then repeated at the end of several weeks of observation. It is to be noted that the absence of glycosuria even on an unlimited diet does not rule out diabetes; patients occasionally have a blood sugar of 250 or even 300 mgs. per cent without a reducing substance in the urine.

CONCLUSIONS

1. Glycosuria or its absence is of no diagnostic significance in establishing a diagnosis of true diabetes mellitus.

2. A modification of the long used glucose tolerance test is offered as a means of differentiating true diabetes and pseudodiabetes. While the method is not infallible it is believed to be fully as reliable as any of the commonly used laboratory procedures.

SEPARATION OF OLD UTERINE SCAR AFTER MULTIPLE CESARIAN SECTIONS

ALEX VAN RAVENSWAAY, M.D.
BOONVILLE, MO.

A woman, aged 28, entered St. Joseph Hospital at term. She had had two cesarian sections in this clinic for contracted pelvis five and two years ago, respectively. The first baby was normal and is now a healthy little boy. The second baby lived only six weeks and died, apparently of pneumonia. It was decided this time that we give her another test of labor, but after pains had lasted for six hours and repeated rectal examinations showed that the baby's head would not engage it was evident that another cesarian section would be necessary.

The operation was performed under local anesthesia, transperitoneally. There were many adhesions of the omentum majus with the uterus. The scar in the uterine wall had given way and there was a large rent, the peritoneum and fetal membranes forming only a very thin protection. Neither the baby nor placenta could be visualized. During her second cesarian section there was a severe hemorrhage, due to anterior implantation of the placenta. This time, trying to play safe, aspiration through the rent was made and an ammoniac fluid appeared. The peritoneal covering and fetal membranes were now torn and the baby extracted by the feet. In order to deliver the baby's head it was necessary to enlarge the old opening above and below. The placenta was implanted in the lower segment of the uterus. There was not much hemorrhage during the operation because no new opening into the uterine wall had to be made.

The baby was in good condition and weighed 3500 grams. In this case it was apparent that rupture of the uterus would have taken place, as the baby would have emerged through the rent in the uterine wall instead of trying to overcome the enormous resistance of a narrow pelvis.

We should like to include a warning against spinal anesthesia for cesarian section. Our experience with it for these cases has not been favorable. Two cases went into shock almost immediately after injection of 100 milligrams of novocain, and only by postponing the operation for a couple of hours and giving intravenous injection of salt solution was tragedy prevented. Strange to say, this dangerous ordeal did not seem to have injured the babies. Local anesthesia of 1 per cent solution of novocain infiltrating the abdominal wall, peritoneum and uterine wall, has been very satisfactory and safe.

Victor Building.

THE EXCRETION OF NONPROTEIN NITROGEN SUBSTANCES BY THE INTESTINE

From the analyses made on eighty-eight specimens of liquid feces obtained from sixteen patients having various diseases, J. Lisle Williams, Evanston, Ill., and George F. Dick, Chicago (*Journal A. M. A.*, Feb. 18, 1933), observed that there is a considerable increase in the concentration of the nonprotein nitrogen metabolites eliminated in the liquid feces of the patients with uremia and in those having chronic nephritis without uremia; in chronic myocarditis there is a moderate increase of these substances over that in the normal group. These values parallel the concentration of the same substances in the blood with the exception of ammonia, which is probably largely formed from the urea. Of the various substances creatinine exhibits the most marked increase in the patients with uremia. Since in many instances several hundred cubic centimeters of liquid fecal material was passed daily, it can thus be seen that an appreciable amount of nonprotein nitrogen is excreted in the stools. In a few specimens the concentration of nitrogen in the stool was greater than in the blood, but in the majority of analyses it was less. The author's results support the idea of "vicarious elimination" when there is a demand created by a "piling up" of the nitrogenous metabolites in the blood. They present experimental evidence which supports the clinical observations of the value of the saline cathartics and hydragogues in the treatment of chronic nephritis and chronic myocarditis. There was sufficient sugar present in the stools of five patients to be measured by Folin's method, and the concentration was slightly greater in two patients with diabetes, although neither of these had a blood sugar above 0.20 per cent.

INDICATIONS FOR NEPHROSTOMY AND NEPHRECTOMY IN CARCINOMA OF BLADDER

Montague L. Boyd, Atlanta, Ga. (*Journal A. M. A.*, Oct. 8, 1932), states that there have been in the past two essential things lacking to make nephrostomy as popular an operation as it should be, namely, satisfactory tube and urinary container arrangements and an operative technic which avoids hemorrhage and urinary leakage about the tube. An efficient urinary drainage method and apparatus are illustrated by a patient who had a nephrostomy eight years ago, is in good health, has married and has carried on the business of life satisfactorily. An operative technic is pointed out which was reported by Dr. Hugh Cabot last year. Attention is called to the importance and frequency of urinary obstruction in carcinoma of the bladder, which can in suitable instances be satisfactorily treated and prevented by nephrostomy. It should be used to prepare patients, particularly for cystectomy, when it is a more rational procedure than ureteral transplantation to the bowel, at least until ureteral transplantation by the Coffey technic is proved to supply adequate drainage as long as it is needed. The literature on carcinoma of the bladder would seem to indicate that urologists do not generally appreciate the frequency with which urinary obstruction occurs with bladder growth, nor are they often enough taking advantage of the opportunity that is offered by nephrostomy to cure or relieve the suffering of patients with carcinoma of the bladder.

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APRIL, 1933

EDITORIALS

THE CRUCIAL CLINICAL EXPERIMENT WITH OVARIAN FOLLICULAR HORMONE

The crucial test of the therapeutic value of the ovarian follicular hormone, theelin,¹ has recently been published by Werner and Collier² of St. Louis University School of Medicine. In the opinion of the commentator this work is the most outstanding and the most carefully controlled clinical experiment to date in this field. It is a fundamental contribution of experimental evidence concerning ovarian function, and basic for proper ovarian endocrine therapy.

Briefly summarized, these investigators have demonstrated that theelin alone of ovarian hormones is sufficient to supply the essential mechanism of menstruation in women, a conclusion previously arrived at by Allen³ from experiments in monkeys. The patients described by Werner and Collier were completely ovariectomized, therefore the results reported are a substitution of theelin for partial ovarian function. That these results are timely is shown by the following quotations from a recent editorial in *The Lancet*⁴:

"... but the gulf even between man and the rabbit remains a wide one, and meanwhile one must recognize that though progress in laboratory experiment has been clear cut and continuous, the application of the experiments to clinical work has been far from satisfactory. . . .

1. Theelin is the name chosen by Doisy (1929) when he succeeded in crystallizing the ovarian follicular hormone. Other common names are folliculin, oestrin, amniotin and progynon.

2. Werner, A. A., and Collier, W. D.: The Effect of Theelin Injections on the Castrated Woman, *J. A. M. A.* **100**:633 (March 4) 1933.

3. Allen, Edgar: The Menstrual Cycle of the Monkey, *Macacus Rhesus: Observations on Normal Animals, the Effects of Removal of the Ovaries, and the Effects of Injections of Ovarian and Placental Extracts Into the Spayed Animals*, Contrib. to Embryol. Vol. 19, Carnegie Inst. Pub. No. 380, 1927. Reviewed in *Endocrine Activity of the Ovary*, *J. A. M. A.* **97**:17 (Oct. 24) 1931.

4. Hormones and Menstruation, Editorial, *The Lancet*, **224**:146 (Jan. 31) 1933.

On the therapeutic side there is such a mass of conflicting evidence that it is almost impossible to arrive at any definite conclusion."

The work of Werner and Collier owes much of its success to the splendid cooperation of a few chosen patients who submitted to an extremely rigorous experimental routine involving daily intramuscular injections for a period of three months, some ninety consecutive days, without missing an injection! In addition, frequent examinations of the genital organs, including inspection examination of the cervix and several endometrial curettages, were required.

Adequate controls were provided by extensive observations of both subjective and objective nature preceding treatment. We present a much condensed summary of these results of substitution therapy with theelin:

The atrophic condition of the breasts following ovariectomy was replaced by an actual enlargement accompanied by a feeling of fullness, a tingling in the gland tree, and erection of the nipples. This began between four and ten days after the onset of injections and was accentuated with continued treatment. In one case a cloudy fluid not unlike colostrum could be expressed.

The cervix, which became pale and ceased to secrete mucus following ovariectomy, showed increasing vascularity and abundant mucus secretion after the onset of treatment. These observations were made periodically by speculum examination.

The endometrium as judged by microscopic examination of sections obtained at curettage, showed extensive hyperplasia of the epithelium and development of the glands to the interval (but not to the premenstrual) stage of development.

Uterine bleeding occurred from this hyperplastic endometrium, there being a total of ten experimental menstrual periods in four patients during the period of three months. In three of these four patients, menstruation followed the cessation of the last injection after three to five days. These periods were accompanied by the usual signs and subjective symptoms that accompany menstruation. The menstrual flow was indistinguishable from menstruation in normal women both as to duration and amount.

In four cases libido was markedly increased during theelin treatment. Subjective symptoms of operative menopause were alleviated.

The conclusions as to the nature of these experimentally produced menses should go far toward settling the doubt in the minds of some gynecologists as to the independence of menstruation and ovulation. Evidence is accumulat-

ing rapidly that ovulation need not necessarily precede menstruation. The pregravid transformation of the endometrium induced by the successive action of follicular hormone followed by the corpus luteum hormone (progesterin or corporin) may be necessary for implantation and early pregnancy, but the corpus luteum hormone is apparently not necessary for menstruation. The attempted distinction between menstruation from an interval rather than a premenstrual endometrium has little bearing on the fundamental nature of the menstrual process.

Another important point demonstrated by Werner and Collier's experiments is that, contrary to recent predictions based on comparative body weight ratios, much less than the accepted amount of theelin may prove an adequate dosage for ovarian hormone therapy in women.

STATUS OF BILLS IN LEGISLATURE

The several bills in the legislature that hold an interest for the medical profession and hospitals have made little progress during the last thirty days. As we go to press their status is about as follows:

H. B. 282, the lien law for physicians and hospitals. This bill passed the House on March 8 and was referred to the Committee on Public Health in the Senate. Much opposition to its passage in the Senate developed when insurance companies and a certain class of attorneys threw an avalanche of protests into the Senate committee against its passage. Unfortunately the hospitals in spite of numerous appeals for co-operation gave little attention to the bill although they are the chief beneficiaries. The bill is still in the Senate committee with little prospect of passage.

H. B. 616, the sales tax. This bill would have taxed the incomes of physicians. It has, however, been re-written and now provides for a tax on so-called luxuries. Obviously, incomes from any occupation cannot be classed as luxuries so physicians will be taxed if at all only upon the possession of something that the law defines as a luxury.

S. B. 11 abolishes the office of the secretary of the state board of health and creates the office of Commissioner of Health. The Commissioner of Health will be the secretary of the state board of health but will not be a member of the board. He "shall be a physician in good standing . . . and a graduate of a reputable medical school." He is subject to removal from office for cause by the Governor at his pleasure and his compensation shall be \$5000 per annum. This bill has passed the Senate and is now in the House for final passage. The present law governing

the appointment and activities of the state board of health remains unaffected by Senate Bill No. 11, with the single exception that the State Health Commissioner shall be the secretary of the board of health but not a member of the board. He is subject to and shall obey the orders of the board of health.

S. B. 16 abolishes the office of Pure Food and Drug Commissioner and transfers the duties of this office to the State Health Commissioner. This bill was passed in the Senate March 24 and is now in the House for final passage.

H. B. 174 limits the employment of public health nurses by county courts to a per diem basis instead of a monthly basis and for the period of the emergency only. This bill is in the Senate committee with little prospect of passage.

S. B. 175 makes the employment of a deputy state commissioner of health for counties and cities optional with the county if the voters so order. It provides no qualifications for the deputy health commissioner. The bill is in the Senate committee with little prospect of passing.

These are the most important measures from the standpoint of the medical profession concerning which we need make comment at this time. In our May issue we can probably give a full account of the session's activities.

THE KANSAS CITY SESSION

The Seventy-Sixth Annual Meeting of the Association will convene in Kansas City, May 1 to 4. Headquarters will be in the President Hotel and all sessions will be held in the Congress Room on the top floor of this hotel.

Eminent men who have contributed much to the advancement of medical science in their respective fields will be guests of the Association. They are Dr. Charles A. Elliott, Chicago, professor of medicine in Northwestern University Medical School; Dr. Arnold S. Jackson, Madison, Wisconsin; Dr. Peter C. Kronfeld, Chicago, associate professor of ophthalmology in the Graduate School of Medicine of the Division of the Biological Sciences, University of Chicago, and Dr. J. Gordon Wilson, Chicago, professor of otology and laryngology in Northwestern University Medical School.

The program contains contributions on topics that are highly interesting to the general practitioner and informative of the late developments in the cause, care and cure of numerous diseases. The Program Committee has scheduled four symposia, namely: Diseases of the Liver, Gastro-Intestinal Diseases, Diseases of the Heart, and Tuberculosis. In addition to

these there are twenty-five contributions not in the symposia.

An innovation has been adopted by the Program Committee which provides a welcome solution of the annual problem concerning the papers read on the last day of the meeting. The members who specialize in diseases of the eye, ear, nose and throat requested our cooperation in the presentation of technical contributions for Thursday afternoon and the members specializing in tuberculosis asked that the morning of the last day of the Session be assigned to them. The program on diseases of the eye, ear, nose and throat has been prepared by the Kansas City Eye, Ear, Nose and Throat Society in conjunction with the Ophthalmic Section of the St. Louis Medical Society and the session will be conducted under their auspices. The program on tuberculosis was prepared by Dr. Sam Snider of Kansas City in conjunction with specialists in that disease.

The Program Committee believes that the papers scheduled for these two sessions will be so highly attractive to those interested in these specialties that the attendance at the Thursday session will be not only large numerically but will be composed of persons who are skilled in their special work and who will add much to the scientific value of the Session. When the program is finally assembled we feel sure that many members will want to remain over for the Thursday session to hear the contributions on these topics.

HYDROPHOBIA CAN BE ERADICATED

The intense agony and suffering of the victim, the utter helplessness of medicine, and the absolute certainty of the end, make hydrophobia one of the most dreaded and most horrible of all diseases. The tragedy is all the more terrible and the grief all the deeper because the occurrence of this preventable disease is a reproach to the community in which it occurs. Rabies can be completely eradicated from any community that will permit its public health officials to carry out adequate measures.

Two deaths from hydrophobia in East St. Louis and one in St. Louis within a period of two weeks recently have once more aroused the public, the medical profession and the health officials into one of those frequent, although transitory, outbursts of activity which as usual is unlikely to be effective because of the many difficulties of completely destroying all stray and unmuzzled dogs; for the problem of rabies is the problem of the stray, unowned and uncontrolled dog. Any attempt along other lines to get rid of this disease is futile. England and the Scandinavian countries have freed themselves by this method and by this alone. As

long as stray dogs roam the streets and the countryside, rabies will continue to claim its victims.

In the face of the present situation in St. Louis and vicinity it is necessary that physicians who are called upon for advice on this subject should be thoroughly aware of the danger, be able to give sound advice and to institute adequate treatment when indicated. They should know that bites on the head and face are extremely dangerous and that no delay is permissible if the animal is unknown or, if known, whether its actions arouse any suspicion of rabies. The saliva of a dog may be infectious two or three days before the appearance of clinical evidence, or before it is possible to find microscopical changes in the brain. For this reason an animal that does not show clinical symptoms of rabies must never be killed for the purpose of making a laboratory diagnosis. If safely restrained for a week rabies will develop unmistakably if the animal is infectious. Antirabic immunization may be postponed with safety during this period unless there are extensive lacerations on the head or face.

Once it is found necessary to give the vaccine it is important to remember that extensive bites on the hand or face require intensive and prolonged treatment. Since protective antibodies are not found in the patient's blood until weeks after the completion of the treatment, delay may prove fatal in this class of injuries.

It seems to us the present crisis in St. Louis provides a splendid opportunity for some philanthropist to organize and pursue to a successful end a plan to legalize and enforce the destruction of all stray, ownerless and homeless dogs at all times. The stray dog may cause the death in its most horrible form of one or more children. Why take a chance?

NEWS NOTES

Dr. R. L. Sutton, Kansas City, was the guest of the Pawnee County (Kansas) Medical Society at Larned, March 3. A skin clinic was held in the afternoon at the state hospital and Dr. Sutton delivered an address at the city auditorium in the evening.

The annual Trudeau Lecture will be given this year by Dr. Allen Krause, Tucson, Arizona, editor of the *American Review of Tuberculosis*, on April 25. The Trudeau Lecture is sponsored by the St. Louis Trudeau Club. It will be presented by Dr. Krause at a joint session of the Trudeau Club and the St. Louis Medical Society at the Society building.

Dr. Rudolph V. Powell, St. Louis, was one of twenty-four physicians elected to membership in the American College of Physicians on February 6 during the annual clinical session in Montreal.

Dr. William G. Patton, St. Louis, assumed the duties of superintendent of the St. Louis County Hospital March 2. He was appointed by the St. Louis County Court and succeeds Mrs. George Brand who was appointed after the death of Dr. Eugene A. Scharff.

Construction of a convalescent home for patients of the Missouri State Service for Crippled Children, Columbia, will begin soon at Marshall. The home is scheduled to be completed in the fall and will house about forty children. Funds for the home were provided in the will of the late Mrs. Georgia Brown Blosser of Marshall.

Dr. John F. Hardesty, St. Louis, was a delegate to the Pan-American Medical Association appointed by the president, Dr. Joseph W. Love, Springfield. The Association met at Dallas, Texas, March 21 to 26. Dr. Hardesty appeared on the scientific program of the section on ophthalmology and delivered an address on "Systemic Control of Intra-Ocular Tension." The program was arranged with meetings of various sections in the mornings and general meetings of the medical and surgical sections in the afternoons. This is the first congress of the association to be held in an English-speaking country.

A three-day cancer conference will be held at the Creighton Memorial St. Joseph's Hospital at Omaha, Nebraska, April 19, 20 and 21. The clinic will be sponsored by the Creighton University Medical School and conducted by Dr. Joseph Colt Bloodgood and Dr. Charles F. Geschickter of the Johns Hopkins Medical School. They will be assisted and the clinical material furnished by the staff of the Creighton University Medical School. Physicians may bring patients for examination, or present the data, history, microscopical sections or lantern slides, for opinion and discussion by those present. Although notification is not essential for attendance and there will be no fee, the school will appreciate physicians planning to attend writing Dr. James F. Kelly, Chairman of the Tumor Clinic, St. Joseph's Hospital, Omaha. It is desired that physicians state if they are bringing a patient or case for presentation and those interested in the microscopical features are requested to bring their own microscopes.

Dr. O. S. Gilliland, Kansas City, was a guest of the Labette County (Kansas) Medical Society at a meeting in Parsons, February 22, and delivered an address on "The Common Cold and Its Treatment."

The April clinic of the Kansas City Southwest Clinical Society will be held April 11 at St. Joseph's Hospital, Kansas City, Missouri. The morning program will consist of presentations of cases of colon disease and interesting pathological specimens relating to colon disease, and an open discussion. The distinguished guest for this clinic will be Dr. Joseph W. Larimore, St. Louis, assistant professor of clinical medicine, Washington University School of Medicine, who will discuss "Diseases of the Colon." In the evening Dr. Larimore will be the guest of the Jackson and Wyandotte (Kansas) county medical societies.

The March clinic was held at St. Luke's Hospital, March 14, and was well attended by physicians from Missouri, Kansas and Oklahoma. The undivided interest of the audience was held throughout the entire morning by the various speakers including Dr. Herman L. Kretschmer, Chicago, the guest of the day.

St. Mary's Infirmary, St. Louis, from which patients were transferred to the Firmin Desloge Hospital recently, reopened as a hospital for Negroes March 19. Fourteen Negro physicians were appointed to the consulting staff and forty-seven to the visiting staff. The administrative control of the institution is vested in an executive council, the members of which are: Rev. Alphonse M. Schwitalla, S. J., dean of the St. Louis University School of Medicine; Rev. Mother Concordia, Mother General of the Sisters of St. Mary, and Sister M. Petra, superintendent of St. Mary's Infirmary; Dr. Charles H. Neilson and Dr. William T. Coughlin, representing the St. Louis University School of Medicine, and Drs. W. R. Arthur and W. B. Christian, representing the hospital staff. The medical supervision is in the hands of an advisory staff composed of the directors of the clinical departments of the St. Louis University School of Medicine. The advisory staff and their departments are: Dr. Ralph A. Kinsella, internal medicine; Dr. William T. Coughlin, surgery; Dr. William H. Vogt, gynecology and obstetrics; Dr. Wm. E. Sauer, otolaryngology; Dr. William H. Luedde, ophthalmology; Dr. John Zahorsky, pediatrics; Dr. Cyrus E. Burford, urology; Dr. Philip Hoffmann, orthopedics, and Dr. Leroy Sante, radiology. The active staff of the institution will be made up of Negro physicians.

The Missouri State Board of Health will hold a meeting at the Washington University School of Medicine, St. Louis, June 7, 8 and 9, for the examination of applicants for licenses to practice medicine in Missouri.

The board of directors of the Abbott Laboratories, North Chicago, Illinois, announce the election at their annual meeting, February 21, of the following officers: Chairman of the board, Edward H. Ravenscroft; president and general manager, S. DeWitt Clough; vice president and assistant general manager, Rolly M. Cain; vice president and treasurer, James F. Stiles, Jr.; vice president in charge of research, Ernest H. Volwiler, and secretary and general counsel, Alfred W. Bays.

A series of nine discussions on community medical problems and interests of St. Joseph is being conducted by the Buchanan County Medical Society. Among subjects being studied by the physicians are: First aid service to the public in emergencies; venereal disease; work of the welfare board; the activities of the board of health; the visiting nurse; tuberculosis; facilities of the medical laboratories; medical service in the public schools, and the medicosocial care of the wards of the county court, the jail, detention home, county infirmary, State Hospital No. 2 and county tuberculosis patients.

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Maltine Company

Maltine with Mineral Oil and Cascara Sagrada

United States Standard Products Co.

Diphtheria Toxoid—U. S. S. P.

Don Baxter Intravenous Products Corporation
Sterile 5% Dextrose Solution in Vacoliter Container

Sterile 10% Dextrose Solution in Vacoliter Container

Hille Laboratories, Inc.

Colloidal Mercury Sulphide—Hille

Hoffman-La Roche, Inc.

Ampules Scopolamine Stable—Roche, 1/100 gr., 1 c.c.

The following products have been included in the List of Articles and Brands Accepted by the Council But Not Described in N. N. R. (New and Nonofficial Remedies, 1932, p. 487):

Don Baxter Intravenous Products Corporation
Physiological Sodium Chloride Solution in Vacoliter Containers.

Dr. T. G. Orr, Kansas City, was a guest of the Southeastern Surgical Congress which met in Atlanta, Georgia, March 6 to 8. He presented a paper on "Rational Treatment of Acute Peritonitis."

The Ophthalmic Section of the St. Louis Medical Society and the St. Louis Ophthalmic Society will hold a joint meeting at the Oscar Johnson Institute, St. Louis, April 14. The scientific program will consist of two motion pictures. Dr. Charles N. Spratt, Minneapolis, will present a film on "Eye Operations" and Dr. C. E. Rice, Rolla, will present a picture entitled "Trachoma in the United States." The program will be preceded by a dinner in the cafeteria of the Washington University School of Medicine. All members of the Association are invited to attend the meeting and dinner. Reservations for the dinner should be in the hands of Dr. A. M. Napier, University Club building, secretary of the Ophthalmic Section, a day in advance.

The midyear clinical meeting of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons met in St. Louis, March 6, with headquarters at the Chase Hotel. Guests were in attendance from New York, Philadelphia, Buffalo, Chicago, Cincinnati, Dallas and Minneapolis. Operative clinics and demonstrations at Barnes Hospital occupied the morning session. At noon a tour through Barnes Hospital preceded a luncheon at the St. Louis Maternity Hospital. Demonstrations and short discussions on gynecological subjects were presented in the conference room of the St. Louis Maternity Hospital and at 3:30 a gynecological clinic was held at St. John's Hospital. The entire program was presented by St. Louis physicians and surgeons. The meeting closed with an automobile tour of the city and a dinner at the Bellerive Country Club.

The following speakers responded to invitations from the Postgraduate Committee of the State Association to deliver addresses at recent meetings of the component county medical societies:

Drs. Norman Tobias and Julius A. Rossen, St. Louis, were guests of the Greene County Medical Society at Springfield, February 24. Dr. Tobias spoke on "Extragenital Chancres" and Dr. Rossen spoke on "Mediastinal Tumors." On February 21 Dr. Herbert L. Mantz, Kansas City, was the guest of the Woman's Auxiliary to the Greene County Medical Society and delivered an address on "Some of the Newer Concepts of Tuberculosis."

At the February 23 meeting of the Clay Coun-

ty Medical Society Dr. A. W. McAlester, Jr., Kansas City, was a guest and addressed the members of the Society on "Errors of Vision Met by the General Practitioner."

On February 24 Drs. Richard Paddock and Oliver Abel, Jr., St. Louis, were the guests of the St. Francois-Iron-Madison County Medical Society at Farmington. Dr. Paddock spoke on "Treatment of Some Common Complications of Pregnancy and Labor" and Dr. Abel spoke on "The Treatment of Coronary Diseases in Private practice." Drs. M. F. Engman, Jr., and W. G. Becke, St. Louis, were guests of the same Society at Farmington on March 23. Dr. Engman spoke on "Treatment of Syphilis" and Dr. Becke spoke on "Treatment of Diabetes Mellitus."

The Marion County Medical Society had as its guests at Hannibal on March 3 Drs. Walter Baumgarten and Quitman Newell, St. Louis. Dr. Baumgarten addressed the Society on "The Use of Iodine in Goiter" and Dr. Newell spoke on "Treatment of Uterine Cancer; A Plea for Early Diagnosis."

Drs. D. D. Stofer and Raymond E. Teall, Kansas City, addressed members of the Linn County Medical Society at a meeting in Laclede on March 7. Dr. Stofer spoke on "The Diagnosis and Treatment of Pneumonia" and Dr. Teall spoke on "The Diagnosis and Treatment of Acute Ear Conditions."

Dr. Richard L. Sutton, Kansas City, was the guest of the Nodaway County Medical Society at Maryville on March 10. He conducted a dermatological clinic for the members of the Society and presented a public lecture on "Snapshots of the Arctic." He also delivered an address entitled "The Diagnosis and Treatment of Cancer of the Skin."

OBITUARY

FRANKLIN E. MURPHY, M.D.

Dr. Franklin E. Murphy was born on November 21, 1866, at Reddington, Indiana. His father was Hugh C. Murphy, an Irish physician who practiced in Scott and Perry Counties, Missouri. His mother was Martha Jane Cook, a gentle Quaker lady. Doctor Murphy's family moved to Independence, Missouri, about 1880 and later came to Kansas City to live. He attended Central High School and was graduated in 1883. He continued his studies at the Philadelphia College of Pharmacy and finished his work there in 1888. He spent the year of 1889 as a pharmacist in Gallagher's Drug Store. He then attended the University of Pennsylvania and was graduated in 1893 from the Medical

Department of this university. He became connected with the Kansas City Medical College following his graduation and served as secretary from 1896 to 1901. Doctor Murphy did postgraduate work in the Universities of Göttingen, Jena, Berlin and Vienna from 1901 to 1903. Upon his return to this country he became a professor of Internal Medicine at the Medical Department of the University of Kansas and served in this capacity from 1905 to 1933. Doctor Murphy's professional attainments were given recognition when he became president of the Jackson County Medical Society in 1909. On February 16, 1915, Doctor Murphy married Miss Cordelia A. Brown. For many years he was councilor of the Missouri State Medical Association and was a member of the State Board of Health from 1921 to 1922. On February 20, 1933, he passed away after an illness of two months.

These historical data show the career of a man who chose his profession with a full knowledge of its difficulties and trials and steadily pursued his course of primary, professional and postgraduate instruction. This is evidence of his determination of character, as he had to earn his own way. His professional ability was recognized by members of the profession and he was appointed to responsible positions as a teacher of medicine and elected to executive responsibilities in medical organizations. We, his friends, take pride in these achievements, but are more interested in bearing witness to the fineness of his character and the sterling worth of his friendship.

Franklin E. Murphy was a man of positive character. No one, friend or enemy, was ever heard to speak of him except in terms of respect. He always took his work seriously and was a hard, patient and methodical worker. His patients all respected him and those with whom he came in intimate contact loved him. Bishop Spencer, whose family physician he has been for years, beautifully voiced this appreciation in his address at the funeral services.

Doctor Murphy not only made careful physical examinations and availed himself of all laboratory, roentgen ray and other scientific aids to diagnosis but he interested himself in the patient as an individual personality. He gave special attention to human relations, and to the joys and sorrows of his patients. He thought of their environment and what effect it might have on their health. In treating them he tried to give wise advice and sympathy, to improve their philosophy of life and to help them adjust themselves to their human as well as their material environment.

One cannot understand Franklin E. Murphy without taking into account the fact that he was

part Quaker and part Irish. He loathed loud speaking, boasting or self advertising. Unconsciously he adopted the motto of Hezekiah, "I will go softly all my days." While he had no predatory instinct, and was not mercenary, he was a stern lover of truth and professional ethics, and was one of the hardest fighters in their behalf.

He resigned from the Missouri State Board of Health because he could not countenance certain practices in the procuring of licenses which it seemed beyond his power to control. He was always an organization man in medicine, regular in his attendance at meetings, and faithful in the fulfillment of committee or other official duties. He won national recognition in his professional activities and contributed many articles to high grade journals and was early elected a member of the American College of Physicians.

His ability to win and hold friends was well illustrated by the esteem in which he was held by physicians who were students in the Kansas City Medical College when he was a secretary and a teacher. During the thirty years of his lifetime which elapsed, after he resigned as secretary of the Kansas City Medical College the writer has seldom met one of his students who did not inquire about Doctor Murphy and speak feelingly of him. Several instances are known where he advised young men as to the choice of a profession and helped them during their studies.

Chancellor Lindley and Dean Wahl of the University of Kansas each wrote after his death that Doctor Murphy had been one of their closest advisors and wisest counselors. The leaders in the Missouri State Medical Association for years relied on him as a man to be depended on to support the best traditions of the profession.

All those who were privileged to know Doctor Murphy in his home were delighted by the atmosphere of culture and cordiality and charmed by the simplicity and affection of the family group.

Every life which is well rounded has beside its devotion to a business or a profession certain side lines of interest in outside things. Doctor Murphy was a very fine amateur photographer and had a beautiful collection of photographs which he had taken on his travels. He was interested in art and was long a director of the Art Institute. Mr. George VanMillett, the well known art critic, said that Doctor Murphy was an unusually fine judge of pictures. He had also a keen appreciation of good music.

The Jackson County Medical Society is proud of the achievements of Franklin E. Mur-

phy. It recognizes that he has notably advanced the standards of medicine in Kansas City and in the adjacent states. It is grateful for his services to organized medicine. Most of all it appreciates his sterling character and its members mourn the loss of a devoted and loyal friend.

ROBERT McD. SCHAUFFLER, M.D.;
the *Jackson County Medical Journal*.

ARTHUR V. MARQUARDT, M.D.

Dr. A. V. Marquardt, St. Louis, a graduate of the St. Louis College of Physicians and Surgeons, 1905, died at the Deaconess Hospital, March 1, after an illness of four weeks. He was 57 years old.

Dr. Marquardt had practiced medicine in St. Louis for twenty-eight years, beginning his practice soon after completing his medical education. Dr. Marquardt was a member of the staff and of the board of directors of the Deaconess Hospital and a lecturer in the hospital nurses' training school. He was also a member of the staff of the Lutheran Hospital.

He early became identified with organized medicine and was ever a loyal member of the St. Louis Medical Society and the State Association. He was a fellow of the American Medical Association.

Dr. Marquardt is survived by a sister, Miss Alvina Marquardt, and a niece, Miss Anna Petri.

CORRESPONDENCE

THE FIRST OUTPOST OF STATE MEDICINE

To the Editor:

I have been serving the medical profession in St. Louis for the last thirty years in laboratory diagnosis. I have appealed for consultations on the basis of an adequate medical education, post-graduate instruction in many places, with contributions to the medical literature, and have been at all times a loyal and devoted member of what is known as "organized medicine."

As a pioneer in this field I have seen the splendid development of the specialty of laboratory diagnosis, but in the last ten years this field has been seriously handicapped by the inroads of public health laboratories. It is a matter of medical history that public health laboratories were originally organized because there was no private agency to perform the tests that are necessary to prevent the spread of communicable diseases; namely, the examination of sputum for tubercle bacilli, the examination of blood for the Widal reaction of typhoid fever and the examination of throat cultures for diphtheria bacilli. Where private laboratories exist, these public health laboratories are relatively superfluous. I recall at the time I started in this work there was practically only one man in St. Louis doing private laboratory work. At that time the city health laboratory was busily engaged with the three tests above mentioned.

Tracing medical history further in St. Louis, it is to be noted that since the time I entered this specialty a number of other very competent men have equipped themselves for this service. These are Drs. Downey L. Harris, Ralph L. Thompson, Rudolph Buhman, George Ives, Charles Klenk and Hollis Allen.

During the war, a number of changes took place in medicine in this country. One of the war measures to curtail the incidence of venereal disease in the neighborhood of cantonments was the establishment of the so-called "venereal clinic." These clinics as war measures were very effective. Like some other war measures, these clinics remained as peace measures. Here, their functions certainly have overlapped and obliterated some of the functions of private practitioners engaged in this work. And, in connection with these clinics, the public health laboratories both state and municipal began free Wassermann service. An intimation was made to the public that unless the public took advantage of this laboratory service there was great danger of the spread of venereal disease. This thesis was incorrect and vicious and has only served to interfere with the private practice of laboratory experts. These public laboratories, once in the swing of Wassermann service in addition to their former functions, have extended their service to include practically everything performed in the diagnostic laboratory. Whether or not the tests safeguard the public health by preventing the spread of communicable and epidemic diseases seems to have been given little consideration. Free examinations for the diagnosis of rabies, the gratuitous administration of Pasteur treatment, urinary analyses, differential blood counts and even tissue diagnosis have come within the domain of these public laboratories. The profession in St. Louis is circularized repeatedly and urged to send their laboratory work to the municipal laboratory. Naturally, the laboratory specialists have appealed to the authorities for a curtailment of this activity but as yet have met with no sympathetic cooperation. As a result of this socialization of laboratory medicine, the laboratory diagnosticians in St. Louis have been very seriously injured as wage earners and at the same time laboratory tests representing great sums of money have been performed free of charge for patients who are well able to pay. Thus, we see the taxpayer bearing the burden of medical care for a large number of people fully able to pay for the examinations and many of them pay no taxes.

We contend, therefore, that there is no need for the wholesale performance of laboratory work free of charge by public health laboratories. So far as the indigent patient is concerned, we dispute even there the necessity of this socialization, for every laboratorian is ready and willing at all times to do the work free of charge when called upon by worthy citizens.

Since the standard of work performed by us is in no way inferior to and is much more personal than that performed by public health laboratories, we feel that we are not asking too much in requesting the practicing physicians to send their specimens and patients needing laboratory tests to the recognized and approved laboratories conducted by private practitioners specializing in laboratory work. The work of the municipal public health laboratory should be limited to making tests that are distinctly public health safeguards, such as sputum for tuberculosis, Widal for typhoid, and throat cultures for diphtheria. Even these tests

could be performed by the private laboratory with celerity and scientific accuracy for a reasonable sum to be paid by the city irrespective of the financial status of the patient. The city would save many thousands of dollars by such an arrangement, the patient would receive personal attention and the laboratorian would have restored to him what is legitimately his due but what is now unfairly diverted from him to the free municipal laboratory. Furthermore, the laboratorian is taxed by the city to maintain a department that literally "takes the bread out of his own mouth." As an economy measure the municipal laboratory could be abandoned. Every test performed by the municipal laboratory could be done by private laboratories quickly and scientifically for a moiety of the sum now spent in the upkeep of the city public health laboratory.

The venereal disease clinic is a real public health service and should be maintained but its work should be strictly limited to indigents, prostitutes, and similarly irresponsible persons.

We ask you, therefore, to revolve these questions in your mind and ask yourself why you are sending your work to the municipal laboratory. Is it your wish to eliminate the laboratory diagnostician from practice and, furthermore, do you want to strengthen the hands of those who are pushing us into "state medicine"?

This letter might be extended to show the extent of this public health activity in the invasion of other specialties of medicine; namely, pediatrics, venereal diseases, roentgen ray service, etc. Where will it stop? Why has it come? Has the profession asked for it? To this, we can answer "No." The profession has not asked for it.

If you think our thesis is correct, will you not in the future send your laboratory work to one of the well-qualified members of my specialty? If your patient is unable to pay, I am sure the work will be gladly done for nothing. If he is in reduced circumstances and entitled to a special fee, this, too, can be accomplished.

It only needs your cooperation to eliminate what is plainly a serious blow to the well-being of the laboratory consultant and to the practicing physicians. By eliminating this, you will help to crush the first outpost of "state medicine."

R. B. H. GRADWOHL, M.D.

IRVINGTON HOUSE SERVES CHILD WITH HEART DISEASE

The plan of Irvington House, a convalescent home for children with heart disease, is to help each child to do more than merely recondition his body. It aids the child to adjust his life to meet the outside world as an individual, who although perhaps slightly weaker physically, is not hopelessly crippled and who by convalescent care and proper instruction may be spared a life of invalidism and may be enabled to live happily and even to earn a living.

It was with this thought in mind that the first organized efforts in this direction began prior to 1915. In 1920 an old orphanage was rented at Mineola, N. Y., which served for five years as a convalescent home. On May 25, 1932, a new Irvington House was dedicated which accommodates 150 boys and girls. Irvington House is nonsectarian and accepts children from 6 to 16 years of age. The story of the development of this institution is told by Phyllis B. Koehler and Janet P. Johl in the March issue of *Hygeia*, the Health Magazine.

SOCIETY PROCEEDINGS

COUNTY SOCIETY HONOR ROLL
FOR 1933

(UNDER THIS HEAD WE LIST SOCIETIES WHICH
HAVE PAID DUES FOR ALL THEIR MEMBERS)

HONOR ROLL

Mercer County Medical Society, December 10, 1932.

Moniteau County Medical Society, January 13, 1933.

Ste. Genevieve County Medical Society, January 19, 1933.

Camden County Medical Society, January 20, 1933.

Dent County Medical Society, February 1, 1933.

Chariton County Medical Society, February 10, 1933.

MISSOURI STATE MEDICAL ASSOCIATION—76TH ANNUAL SESSION

Kansas City, May 1, 2, 3, 4, 1933

PRELIMINARY PROGRAM

Guests

Elliott, Charles A., Chicago: Parenchymatous Hepatic Disease.

Jackson, Arnold S., Madison, Wisconsin: Diagnosis and Treatment of Diseases of the Thyroid Gland.

Kronfeld, Peter C., Chicago: The Development of the Tear-Searing Operation Up-to-Date.

Wilson, J. Gordon, Chicago: Vertigo.

Symposia

Symposium on Diseases of the Liver:

Cole, Warren H., St. Louis: The Role of the Hepatic Function in Surgical Problems.

Helwig, Ferdinand, Kansas City: The Relationship of the Liver to Other Visceral Organs in Disease.

Hoxie, George H., Kansas City: The Symptoms and Treatment of the Cirrhoses of the Liver.

Black, Donald R., Kansas City: Jaundice.

Symposium on Gastro-Intestinal Diseases:

Williams, D. A., Kansas City: Dilatation of the Esophagus.

Thompson, J. W.; and Soper, Horace W., St. Louis: Gastric and Duodenal Ulcer.

Orr, T. G., Kansas City: Intestinal Obstruction.

Bristow, Harry G., St. Louis: Colitis.

Seyin, Omar R., St. Louis: Carcinoma of the Colon.

Symposium on Diseases of the Heart:

Davis, R. C., Kansas City: Auricular Fibrillation and Flutter.

Harrison, Lee B., St. Louis: Heart Block.

Ferris, Carl R., Kansas City: Extrasystoles and Paroxysmal Tachycardia Other Than Flutter.

Bohan, Peter T., Kansas City: Congestive Heart Failure.

Smith, Elsworth, St. Louis: The Arrhythmias Associated With Thyrotoxicosis.

Davis, Robert C., Kansas City: Demonstration of the Lahey Clinic Film of Electrocardiography (Very Elemental).

Symposium on Tuberculosis:

Boisliniere, L. C., St. Louis: Silicosis.

Discussion opened by Dr. Jesse Douglass, Webb City.

Snider, Sam H., Kansas City: Tuberculosis of Childhood.

Discussion opened by Dr. Harry C. Berger and Dr. George H. Hoxie, Kansas City.

Kettelkamp, George D., Koch: Diagnosis and Prognosis of Adult Pulmonary Tuberculosis.

Discussion opened by Dr. H. L. Mantz, Kansas City.

Stokes, J. B., Mount Vernon: Nonsurgical Treatment of Tuberculosis; Including Pneumothorax.

Discussion opened by Dr. L. E. Wood, Kansas City.

Allen, Duff S., St. Louis: Surgical Treatment of Pulmonary Tuberculosis.

Discussion opened by Dr. W. W. Buckingham, and Dr. Earl C. Padgett, Kansas City.

Dickson, Frank D., Kansas City: Tuberculosis of Bones and Joints.

Discussion opened by Dr. James R. Elliott, Kansas City.

Symposium on Diseases of the Eye, Ear, Nose and Throat:

Green, John, St. Louis: Medicosociologic Aspects of Chronic Glaucoma.

Dean, L. W., St. Louis: The Relationship Between Diseases of the Nose, Throat and Ear and Pulmonary Diseases.

Kronfeld, Peter C., Chicago: The Development of the Tear-Searing Operation Up-to-Date.

Wilson, J. Gordon, Chicago: Vertigo.

Individual Contributions

Bartlett, Willard, Jr., St. Louis: Renal Complications of Gallbladder Disease.

Bills, Marvin L., Kansas City: Interpretation of Pathological Reflexes.

Campbell, F. B., Kansas City: Anorectal Infection; Its Relation to General Medicine.

Falk, O. P. J., St. Louis: Treatment of Cardiac Episodes of Middle Life.

Gibson, E. T., Kansas City: Narcolepsy.

Ginsberg, A. M., Kansas City: Gastric Symptoms of Acute Heart Diseases.

Glenn, J. E., and Burford, C. E., St. Louis: The Management of Bladder Diverticulae.

Hall, Thomas B., Kansas City: Enlarging Conceptions of Mycotic Infections of the Skin.

Hertzler, A. E., Kansas City: A Preview of My New Book on Diseases of the Breast. Lantern Slides.

Hetherington, E. M., Kansas City: Operation for Retroversion of the Uterus and Varicosities of the Broad Ligaments.

Hunt, Claude J., Kansas City: The Bleeding Duodenal Ulcer.

Olmsted, Wm. H., St. Louis: Arteriosclerosis of the Lower Extremities With Special Reference to Treatment of Diabetic Gangrene.

Reis, Carl J., St. Louis: The Increasing Significance of Allergy.

Robinson, E. Kip, Kansas City: Radium in Gynecology.

Sanford, J. Hoy, St. Louis: Transurethral Prostatectomy: Indications and Limitations.

Sexton, D. L., St. Louis: Headaches Associated With Endocrine Disorders.

Thiele, George H., Kansas City: The Symptomatology and Diagnosis of the Anorectal Diseases.

Werner, August A., St. Louis: Effect of the Thyroid, the Pituitary and the Gonads Upon Pre-adult Development.

Wooley, Paul V., Kansas City: Simplicity in the Treatment of Anorectal Diseases.

BOONE COUNTY MEDICAL SOCIETY

The Boone County Medical Society met at the Boone County Hospital March 7 with the president, Dr. F. G. Nifong, Columbia, in the chair. The attendance was good.

Dr. William James Stewart, Columbia, who is in charge of the Missouri State Service for Crippled Children, was voted membership in the Society. The application of Dr. C. C. Palmer, Centralia, for membership was turned over to the board of censors. Dr. E. E. Evans, formerly of Jackson, Louisiana, now of Columbia, was elected to membership.

The scientific program consisted of a round-table discussion on "Medical Economics" with emphasis on the care of the indigent sick of Boone County. Almost every one present entered into the discussion, Dr. Nifong acting as moderator. It was the consensus of opinion that no one or two physicians could give adequate service all over the county, but it was conceded by all that it is the Society's problem to lead the way in adopting a plan by which some member of the Society could answer every indigent call.

The Medical Society Plan, adopted by some of the Iowa counties, was commented upon favorably.

Some educational movements were set in motion whereby it is hoped the County Court, Public Welfare Society and the community will realize their responsibility and cooperate.

S. D. SMITH, M.D., Secretary.

BUCHANAN COUNTY MEDICAL SOCIETY

The Buchanan County Medical Society was called to order by the vice president, Dr. G. T. Bloomer, St. Joseph, in the Missouri Methodist Hospital at 8 p. m., February 1.

Dr. W. T. Elam, St. Joseph, moved that all members who are active, regardless of age, pay their dues. After considerable discussion this matter was postponed until the new revision of the By-Laws, which was passed in 1932, be studied to see just what should be done.

Dr. W. T. Elam, St. Joseph, moved that the Society approve the bill which is now before the legislature for the creation of liens in favor of physicians, surgeons and hospitals upon moneys due injured persons so that the fees for services rendered by physicians and hospitals will be paid. The motion carried.

The necrological committee reported as follows on the recent death of Dr. Caryl Potter:

WHEREAS, In the wisdom of Almighty God Caryl Potter has been taken from our midst in the heyday of his life, and we bow in submission to Divine Providence. Be it therefore

Resolved, That we, his fellow workers, feel the loss of his able and masterly discussions and brilliant work. Buchanan County Medical Society realizes the absence of a leading and aggressive member from its ranks. Be it further

Resolved, That St. Joseph sustains the loss of an active, enterprising, contributing citizen, in fellowship, in patriotism, in scientific work, in church affiliation and in the maintenance of civic organization. Be it further

Resolved, That the members of the Buchanan County Medical Society deeply sympathize with the family in their bereavement. We share with them the loss sustained. We feel buoyed with the knowledge that Dr. Potter has left a name and a record as a physician which will always be noted in the annals of Missouri medicine, and pray this may mitigate the sorrow of his departure. Be it further

Resolved, That a copy of these resolutions be spread upon the minutes of the Society and a copy be sent to the family.

Dr. Owen W. D. Craig, St. Joseph, chairman of the program committee reported that at the next scientific meeting, February 15, there will be a moving picture of "Diseases of the Heart."

Meeting of February 15

The February 15 scientific session of the Buchanan

County Medical Society was called to order by the president, Dr. W. H. Minton, St. Joseph, in the Missouri Methodist Hospital at 8 p. m.

Dr. Minton presented a very interesting case of lymphangitis to the members present and spoke of the similarity of appearance of this condition and acute mastoiditis.

The scientific portion of the program was presented in a very able manner by Dr. Donald R. Black, Kansas City, and consisted of a film from the Lahey Clinic, Boston. The title was "Heart Action and the Electrocardiogram."

Dr. Black spoke for about thirty minutes before showing the film on cardiac diseases. This was very much appreciated and made the display of the film more instructive. The general opinion of all our members present was that it was the most instructive scientific and helpful exhibition ever presented to our Society.

At the end of the exhibition a unanimous vote of thanks was extended to Dr. Black for coming to us at this time.

Meeting of March 1

The Society was called to order by the president, Dr. W. H. Minton, St. Joseph, in the Missouri Methodist Hospital, at 8 p. m., March 1.

Dr. Carby Wortley, 731 Faraon Street, St. Joseph, was elected to provisional membership of the Society.

Dr. W. T. Elam, St. Joseph, member of the Committee on Public Policy of the State Association, having recently returned from Jefferson City where the legislature is now in session made a short talk about the bills now pending before that body which should be of interest to our members. He placed special stress on H. B. No. 282. In closing his remarks Dr. Elam moved that the society heartily endorse H. B. No. 282 and ask the Chamber of Commerce of the City of St. Joseph, to throw its weight behind this Society in securing the passage of the bill. The motion was seconded and carried.

Dr. Floyd H. Spencer, St. Joseph, speaking for the St. Joseph Clinical Society, announced that clinics will be held at the two hospitals April 19 and 20. Speakers of note will attend. All members of the Buchanan County Medical Society are invited to become members and take part in the clinic.

Dr. Earl Senor discussed the visiting nurse's work, its importance, how it can be made available when needed, the economics of the problem, and closed by introducing Miss Alma C. Haupt, Chicago, associate director of the National Organization for Public Health Nursing, who took as her subject "Community Aspect of Public Health Nursing."

Miss Haupt handled her subject in a very pleasing manner showing conclusively that she understood of what she was speaking. She especially stressed the importance of the City of St. Joseph opening its Venereal Clinic and Tuberculosis Hospital quoting the experiences of other cities in which it had paid from an economic standpoint. At the close of her talk which lasted about forty-five minutes the Society by rising extended her a unanimous vote of thanks for presenting this subject.

Others present who discussed this subject in short talks were Harry Block, a retired merchant, Mr. Gebhart, head of the Community Chest, Mrs. A. B. McGlothlan, ex-president of the Woman's National Auxiliary to the American Medical Association, and Dr. H. Delamater, head physician of the public schools of St. Joseph.

EMMETT F. COOK, M.D., Secretary.

CASS COUNTY MEDICAL SOCIETY

The Cass County Medical Society held its regular quarterly meeting at the office of Dr. M. P. Overholser, Harrisonville, March 9, Dr. T. W. Adair, Archie, vice president, presiding.

Dr. T. W. Adair reported three cases from his practice as follows: Malformation of the female urethra; rickets, and fracture of leg in paraplegiac.

Dr. L. V. Murray, Pleasant Hill, read a paper on "Dyspepsia; Its Cause and Significance."

Dr. M. P. Overholser, Harrisonville, read a paper on "A Compilation of Some Statistics, Reports, Statements, etc. on Diabetes Mellitus and Insulin Therapy."

These reports and papers were discussed by Drs. T. W. Adair, Archie; A. H. Baldwin, Pleasant Hill; W. H. Goodson, Liberty; B. O. Hartwell, Drexel; L. V. Murray, Pleasant Hill; I. N. Parrish, Freeman; M. P. Overholser and J. S. Triplett, Harrisonville, and J. S. Love, Springfield.

We had as honored guests Drs. J. W. Love, Springfield, president of the Missouri State Medical Association, and W. H. Goodson, Liberty, both of whom addressed the Society.

The Society extended a vote of thanks to Drs. Love and Goodson, and its best wishes for the speedy recovery of our president, Dr. H. A. Brierly, Peculiar, who was unable to attend the meeting on account of sickness.

The Society decided to leave the selection of the next place of meeting to the program committee.

J. S. TRIPLETT, M.D., Secretary.

CLAY COUNTY MEDICAL SOCIETY

The first meeting for 1933 of the Clay County Medical Society was held at the Royal Hotel in Excelsior Springs, February 23, at 6 p. m. Twenty-five members, wives and guests attended the dinner consisting of half spring chicken, fresh strawberries and the like. The ladies' auxiliary met concurrently in the hotel parlors.

At the opening of the business session the secretary read a resolution relating to membership dues which was instantly adopted and signed by the president. It was ordered sent to the House of Delegates at the coming State Meeting in May.

Dr. A. W. McAlester, III, Kansas City, started the program with "Errors of Vision Met by the General Practitioner." The lecture was beautifully illustrated by stereopticon pictures of practical instruments for eye examination and diagnosis and cases of everyday occurrence. The doctor's talk was practical and well adapted to his audience. He didn't advise us to sail in and remove the next cataract we encounter—but he made the retinal picture and intra-ocular tension clearer for us. He was warmly applauded, and Dr. J. H. Rothwell, Liberty,—as always—said the right thing in discussion.

Dr. Robert C. Cook, in charge of United States Veterans' Hospital 99, spoke on "Care of the Veteran." Dr. Cook took his subject in hand from every angle, from actual medical contact on up to rights and privileges of the soldier and his hospital. This subject concerns every medical man if not every other man, woman and child in America. Dr. Cook's talk was eminently educational, shot through with the keen physician's understanding. It was unique and the best lecture of its kind we have ever had.

Dr. J. E. Baird, Excelsior Springs, discussed the paper. He "trimmed" in true Baird fashion, the so-called Economy League and the National Chamber of Commerce, comparing them with the "Farm Relief"

tragedy, and the "R. F. C. Fiasco." "Don't listen to any siren songs," said Dr. Baird, with a tone of intense determination.

The secretary closed the discussion with general chaff, and expressed the appreciation of the Society for the valuable talks of the lecturers. It was a good-will meeting. One member paid dues. Some of our active, earnest men were unable to attend this meeting because of physical indisposition of one sort or another. Our warmest hopes are for their ultimate and early recovery. The Society welcomes Dr. Harry Staley, North Kansas City (Tulane, 1931) as the first new member for 1933.

J. J. GAINES, M.D., Secretary.

GREENE COUNTY MEDICAL SOCIETY

The regular meeting of the Greene County Medical Society was held February 10 in the Public Library with the president, Dr. J. H. Fulbright, Springfield, presiding.

There were twenty-one members present and Dr. Wm. M. West, Monett; Dr. R. D. Cowan, Aurora, and Drs. Farthing and Dahlstrom, Springfield, were visitors.

Dr. W. E. Handley, Springfield, read the treasurer's annual report which was approved.

The scientific program consisted of a very interesting paper by Dr. F. A. Harrison, Springfield, on "Juvenile Tuberculosis." Dr. U. J. Busiek, Springfield, opened the general discussion.

Dr. P. F. Cole, Springfield, spoke relative to roentgen ray findings, and Dr. M. C. Stone, Springfield, presented some postmortem specimens.

Meeting of February 24

The Greene County Medical Society met February 24, in the Public Library with the president, Dr. J. H. Fulbright, Springfield, presiding. Thirty-one were in attendance.

Dr. Robert Vinyard, Springfield, chairman of the public policy and legislative committee, read a letter pertaining to H. B. No. 282 which provides for hospitals, physicians and surgeons to have a lien against any money due a person on account of an accident.

The Society passed a resolution favoring this bill and instructed the secretary to write our Representatives in the State legislature urging them to vote for the passage of this bill.

The scientific program consisted of a very interesting paper on "Extragenital Chancres" by Dr. Norman Tobias, St. Louis. The paper was illustrated with about fifty lantern slides showing lesions on the lip, tonsil, tongue and finger. Dr. Julius A. Rossen, St. Louis, spoke on the subject "Mediastinal Tumors; Are They Lymphosarcoma Leukemia, or So-Called Leukosarcoma?" Both papers were thoroughly enjoyed by all present.

A rising vote of thanks was offered to Drs. Tobias and Rossen after which the meeting adjourned to meet March 10.

J. N. WAKEMAN, M.D., Secretary.

**HOWELL-OREGON-TEXAS COUNTY
MEDICAL SOCIETY**

The Howell-Oregon-Texas County Medical Society met at West Plains, January 26. Dr. H. A. Thompson, Lanton, presided.

Dr. Thompson reported a case involving some unusual conditions and a round-table discussion followed.

Dr. J. R. Womack, Houston, being absent, his

subject "Medical Legislation and the Proposed Reforms in Missouri" was discussed by the members.

The annual election of officers resulted in the following: Dr. Ford A. Barnes, Thayer, president; Dr. D. D. Cox, Pomona, vice president; Dr. L. E. Toney, West Plains, secretary and treasurer; Dr. A. H. Thornburgh, West Plains, delegate, and Dr. P. D. Gum, West Plains, alternate.

Those present were Drs. F. A. Barnes, Thayer; J. W. Bingham, West Plains; G. B. Forest, Alton; H. A. Thompson, Lanton, and L. E. Toney, P. D. Gum, and A. H. Thornburgh, West Plains. Visitors present were: Drs. A. C. Ames and L. G. Livingston, Mountain Grove.

L. E. TONEY, M.D., Secretary.

JASPER COUNTY MEDICAL SOCIETY

The Jasper County Medical Society met at Joplin, February 7. Ten members were present. Dr. Kinney, Webb City, was a guest.

A communication from Dr. J. B. Williams, Los Angeles, concerning an editorial in the *Joplin Globe* was read.

Dr. W. S. Loveland, Joplin, reported for the committee to investigate the life cycle of the maggot producing fly. The facts were definitely established that certain flies do give birth to live maggots.

The following case reports were given: Dr. H. L. Wilbur, Joplin, case of concussion of brain with complete paralysis of arms, legs, and urinary bladder; catheterization necessary; patient slowly improving; no bone fractures of cranium or vertebrae. Dr. O. T. Blanke, Joplin, told of the death of patient that he had reported at a previous meeting. Dr. Walker reported a case.

It was moved and seconded that the paper of the evening prepared by Dr. J. E. Douglass, Webb City, be postponed for one week. The motion carried.

Dr. Douglass made few informal remarks about the interpretation of roentgen ray plates in pulmonary tuberculosis.

Meeting of February 21

Twenty-one members were present at the meeting of the Jasper County Medical Society at Joplin, February 21.

A letter from Dr. Goodwin concerning H. B. No. 282 was read. It was moved and seconded that the secretary be instructed to communicate with the State Representatives informing them that the Jasper County Medical Society favors H. B. No. 282. The motion carried.

Dr. R. M. James, Joplin, reported a case of a woman delivering two pregnancies in ten months.

Dr. W. S. Loveland, Joplin, spoke on "A Series of Unusual Obstetrical Cases," including a discussion of the use of forceps as against version.

The paper was discussed by Drs. L. C. Chenoweth, R. L. Neff, J. W. Hardy, B. E. DeTar, J. W. Barson, A. M. Gregg, E. D. James, A. B. Clark, of Joplin; G. H. Wood and L. B. Clinton, of Carthage, and J. M. Gray, Chitwood. Dr. S. H. Miller, Joplin, reported the delivery of twins.

Meeting of March 4

There were twelve members present at the March 4 meeting of the Jasper County Medical Society. It was moved that a film of electrocardiographic studies be procured and shown at a regular meeting, the expense to be taken care of by the Society. The motion carried.

It was moved and seconded that the Jasper County Medical Society hold the next meeting at the Memo-

rial Hall rather than at the Y. M. C. A. An amendment proposing that a committee be appointed to investigate the meeting place was voted on and lost. The motion to change the meeting place for next week carried.

Miss Moorman of the Duncan Laboratories gave a demonstration of the use of 1 per cent HCL in asphyxia. Two rabbits were asphyxiated with ordinary heating gas and one was given the HCL. This rabbit immediately began breathing and in a few seconds was in apparent comfort. The second rabbit was given a solution of methylene blue and recovered in a few minutes. A vote of thanks was extended to Miss Moorman from the Society for her demonstration.

Dr. W. S. Loveland, Joplin, reported a case of thrombosis of the femoral vein and artery. This was a case of chronic endocarditis. The patient died and large clots were found in both the vein and the artery when the body was embalmed.

Dr. S. H. Miller, Joplin, reported a similar case.

Dr. B. E. DeTar, Joplin, reported a case of almost complete transverse fracture of skull following an auto accident. Patient was unconscious, pulse was weak and blood pressure low. The patient was given glucose and recovered.

Meeting of March 7

Twenty-seven members and seven visitors were present at the meeting of the Jasper County Medical Society, March 7.

It was moved and seconded that a meeting be held in the American Legion room at which time a vote be taken on a permanent place for further meetings. The motion carried.

The program of the evening, a moving picture study of electrocardiography, was presented by Dr. O. T. Blanke, Joplin. Following the picture the practicality of electrocardiography was taken up in an active general discussion.

PAUL W. WALKER, M.D., Secretary.

LINN COUNTY MEDICAL SOCIETY

The Linn County Medical Society was invited by Dr. F. W. Burke to take dinner with him and Mrs. Burke at Laclede the evening of March 7.

The dinner was attended by the following members and their wives: Dr. and Mrs. S. T. Brownfield, Dr. and Mrs. J. Lane Evans, Dr. and Mrs. Roy Haley, Dr. and Mrs. J. L. Pierce, and Dr. and Mrs. E. D. Standley, of Brookfield; Dr. and Mrs. M. L. Dieckroeger, Dr. and Mrs. P. L. Patrick, and Dr. and Mrs. Ola Putman, of Marceline; Dr. and Mrs. E. F. Wier, Meadville; Dr. and Mrs. J. R. Dixon, Linneus; and Dr. and Mrs. F. W. Burke, Laclede, and Dr. and Mrs. A. J. Simpson, Chillicothe.

The dinner was served in the annex of the Methodist Church. After all guests were seated, Dr. Burke proceeded to demonstrate that he was equally adept at carving or talking, by delivering an excellent address while carving a thirty-pound turkey.

Immediately after the dinner the Ladies' Auxiliary met with Mrs. Burke at her home, and the meeting of the Society was called to order by the president, Dr. J. R. Dixon, Linneus, who introduced the speakers of the evening.

Dr. Raymond E. Teall, Kansas City, read a paper on "The Diagnosis and Treatment of Acute Ear Conditions."

Dr. D. D. Stofer, Kansas City, read a paper on "The Diagnosis and Treatment of Pneumonia." Both papers were carefully prepared, well delivered and fully discussed.

The Society extended their thanks to Dr. and Mrs.

Burke for the delightful dinner and to Dr. Stofer and Dr. Teall for their part of the program.

The next meeting is to be held at Meadville, probably in June.

OLA PUTMAN, M.D., Secretary.

NODAWAY COUNTY MEDICAL SOCIETY

The Nodaway County Medical Society met in Maryville, February 10. The meeting was called to order by the president, Dr. R. C. Person, Maryville, at 9:30 p. m.

Members present were: Drs. C. T. Bell, L. E. Dean, Loren E. Egley, R. C. Person, and William Wallis, Jr., Maryville; Dr. J. M. Boyles, Conception Junction, and Dr. Chas. D. Humbert, Barnard. Guests present were: Drs. Carl R. Ferris and James E. Stowers, Kansas City, Missouri; and Drs. Earl Braniger and Jesse Miller, dentists, Maryville.

The guests from Kansas City had come as speakers for the evening through the courtesy of the Postgraduate Committee of the Missouri State Medical Association. Dr. Ferris gave an excellent essay on "Pneumonia and Its Treatment." He gave particular attention to the differentiation into types and told of his experiences with the antipneumococcic sera, oxygen, rest, sedatives and cardiac stimulants. His material was discussed by Drs. Dean and Bell.

Dr. Stowers presented a brilliant paper on "Surgical Conditions of the Abdomen," with special attention to differential diagnosis. His ideas were given in a very forceful way and were warmly applauded.

Meeting of March 10

Dr. Richard L. Sutton, Kansas City, gave a popular lecture, "Snapshots from the Arctic," under the auspices of the Nodaway County Medical Society, in the auditorium of the Northwest Missouri State Teachers College, Maryville, at 3 p. m., March 10. This entertaining travelogue was heard by members of the Society and by several hundred students and members of the faculty of the college and a large representation from the general public. It was accorded much applause. The speaker was introduced by Dr. Leslie E. Dean, Maryville.

The regular monthly meeting of the Nodaway County Medical Society was held in Maryville on the evening of March 10. Dr. R. C. Person, president, Maryville, called the meeting to order at 7:45 p. m.

Members present were Drs. Charles W. Kirk and R. B. Bridgeman, Jr., of Hopkins; Dr. Charles D. Humbert, Barnard; Drs. Charles T. Bell, Hiram Day, L. E. Dean, Loren E. Egley, C. V. Martin, R. C. Person, Jack Rowlett, and Wm. M. Wallis, Jr., of Maryville. Guests present were Dr. Richard L. Sutton, Kansas City; Dr. B. F. Byland, Burlington Junction; Dr. W. R. Jackson, Maryville; Dr. M. A. Mulvaney, Fairfax; Dr. J. A. Gray, Watson; Dr. Austin McMichael, Rock Port; Drs. C. E. Benham and C. M. Waugh, Tarkio; Dr. P. E. Newport, Clarinda, Iowa; Drs. B. S. Barnes, H. M. Bunch, W. H. Maloy, and W. F. Stotler, Shenandoah, Iowa; Dr. J. W. Hake of the department of physics of the Northwest Missouri State Teachers College, Maryville; Drs. Roy V. Canon, E. L. Enis, Jesse Miller, W. B. Owen, H. L. Stinson, and D. J. Thomas, dentists, of Maryville, and several Sisters from the Hospital staff.

Dr. W. R. Jackson, Maryville, was elected to membership.

The president introduced Dr. Sutton, who had come as lecturer for the evening through the courtesy of the Postgraduate Committee of the Missouri State

Medical Association. During the late afternoon Dr. Sutton had held an informal dermatologic clinic at the hospital for ten members of the Society at which more than a dozen cases of unusual skin disorders had been presented. His essay for the evening was entitled "The Diagnosis and Treatment of Cancer of the Skin" and was illustrated with many interesting lantern slides. His paper was well spiced with humor and the salient features of innumerable case histories were brought out in illustration of Dr. Sutton's routine in handling these cases. The lecture was followed closely by the large audience and was later discussed by Drs. Wm. M. Wallis, Leslie E. Dean, of Maryville, and Dr. C. M. Waugh, Tarkio.

CHARLES D. HUMBERD, M.D., Secretary.

ST. FRANCOIS-IRON-MADISON COUNTY MEDICAL SOCIETY

The St. Francois-Iron-Madison County Medical Society held its regular meeting at the County Court House at Farmington, February 24. Dr. D. Appleberry, River Mines, presided.

Dr. George F. Creswell, Potosi, was presented for membership and elected. Dr. M. B. Barber, Fredericktown, moved and Dr. R. Appleberry, Farmington, seconded, that Washington County be added to the Society and the name of the Society become the St. Francois-Iron-Madison-Washington County Medical Society. The motion carried.

Dr. Fred Long, Farmington, moved, seconded by Dr. V. W. Taylor, Leadwood, that the Society endorse Dr. M. P. Ravenel, Columbia, for the position of Commissioner of Health and Secretary of the State Board of Health of Missouri. The motion carried.

A very interesting program was presented through the courtesy of the Postgraduate Committee. Dr. Oliver Abel, Jr., St. Louis, gave a talk on "The Treatment of Coronary Diseases in Private Practice." Another paper was given by Dr. Richard Paddock, St. Louis, on "Treatment of Some Common Complications of Pregnancy and Labor." An interesting discussion followed both of these papers.

The next regular meeting will be held in Farmington.

C. H. APPLEBERRY, M.D., Secretary.

HOW DO REST AND COLLAPSE TREATMENT CURE PULMONARY TUBERCULOSIS?

Pol N. Coryllos, New York (*Journal A. M. A.*, Feb. 18, 1933), emphasizes the fact that the basic principle in the treatment of tuberculosis in all its forms is rest. More especially in pulmonary tuberculosis, complete and prolonged bed rest is advised in order to "immobilize the lungs" and "favor healing by fibrosis." During the past years, a number of surgical procedures have been adopted for reinforcing rest by mechanical splinting of the diseased lung, as pneumothorax, phrenic exeresis or thoracoplastic collapse. If for any reason conditions of anaerobiosis are created in a tuberculous area of the lung or of any other organ, tubercle bacilli could not continue to thrive and grow. The lesion will remain stationary and then regress; the amount of bacilli and their toxic products will rapidly decrease. The tubercle bacillus is a strict aerobe requiring large amounts of oxygen for continuation of life and growth. "Rest" and "collapse therapy" produce in the lung decrease or suppression of oxygen. The evolution of tuberculous cavities can be explained by the condition of their "draining bronchi." Development of fibrosis is closely related to anoxemia.

WOMAN'S AUXILIARY

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

11th Annual Meeting, Milwaukee, 1933

President, Mrs. James F. Percy, Los Angeles, Calif.

President Elect, Mrs. James Blake, Hopkins, Minnesota.

WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION

9th Annual Meeting, Kansas City, 1933

President, Mrs. David S. Long, Harrisonville.

President-Elect, Mrs. Hudson Talbott, St. Louis.

ORGANIZED COUNTIES AND PRESIDENTS

COUNTY	PRESIDENT AND ADDRESS
Boone.....	Mrs. C. M. Sneed, Columbia
Buchanan.....	Mrs. C. H. Werner, St. Joseph
Cass.....	Mrs. H. A. Brierly, Peculiar
Cape Girardeau.....	Mrs. W. W. Ford, Gordonville
Clay.....	Mrs. H. J. Clark, Excelsior Springs
Cole.....	Mrs. James T. Leslie, Jefferson City
Gentry.....	Mrs. W. S. Campbell, Albany
Greene.....	Mrs. W. C. Check, Springfield
Jackson.....	Mrs. Wilbur A. Baker, Kansas City
Jasper.....	Mrs. Ulysses G. Hoshaw, Joplin
Johnson.....	Mrs. William R. Patterson, Warrensburg
Lafayette.....	Mrs. Odus Liston, Oak Grove
Linn.....	Mrs. Ola Putman, Marceline
Livingston.....	Mrs. Reuben Barney, Chillicothe
Miller.....	Mrs. G. D. Walker, Eldon
Randolph-Macon.....	Mrs. P. C. Davis, Moberly
St. Louis City.....	Mrs. A. G. Wichman, St. Louis
Saline.....	Mrs. L. S. James, Blackburn
Vernon-Cedar.....	Mrs. T. B. Todd, Nevada
26th District.....	Mrs. W. H. Breuer, St. James

WOMAN'S AUXILIARY, MISSOURI STATE MEDICAL ASSOCIATION—NINTH ANNUAL MEETING

Kansas City, May 2,3,1933—Preliminary Program
Hotel President, May 2, 1933

9:00 a. m. Registration.

10:00 a. m. Meeting of Executive Board, Hotel President. Mrs. W. H. Goodson, Vice President, presiding.

1:00 p. m. Complimentary Luncheon and Musical Honoring Past Presidents. Hostesses, Members of the Jackson County Auxiliary. Mrs. W. H. Goodson and Mrs. Wilbur A. Baker, presiding.

6:00 p. m. Informal dinner, Hotel President.

8:00 p. m. Open meeting of the Missouri State Medical Association.

Wednesday, May 3, 1933

9:00 a. m. General Meeting, Hotel Muehlebach, Mrs. David S. Long, presiding.

Invocation, Mrs. M. P. Overholser.

Greetings, Mrs. Wilbur A. Baker, President Jackson County Auxiliary.

Response, Mrs. Mazyck P. Ravenel, Columbia.

Reading of Minutes.

Announcement of Committees.

In Memoriam, Mrs. W. H. Goodson.

Reports of State Officers.

Reports of State Chairmen.

Report of Revisions Committee.

Roll Call of Counties.

Report of Credential Committee.

Report of Nominating Committee.

Election of Officers.

Report of Courtesy Committee.

12:30 p. m. Luncheon. Hotel Muehlebach, Mrs. David S. Long, presiding.

Invocation, Mrs. A. W. McAlester.

Introduction of Distinguished Guests.

Address, Dr. Estella Ford Warner, United States Public Health Service, Washington, D. C.

Introduction of New Officers.

Adjournment.

3:00 p. m. New Executive Board Meeting. Hotel Muehlebach, Mrs. Hudson Talbott, presiding.

6:00 p. m. Dinner. Kansas City Club, Mrs. Hudson Talbott, presiding.

Notes

Mrs. David S. Long, Harrisonville, president of the Woman's Auxiliary to the Missouri State Medical Association, will be in St. Louis, May 2, the first day of the annual meeting, presiding as president at the annual meeting of the State Federation of Women's Clubs. Mrs. Long will go by plane to Kansas City to be present at the Wednesday session of the Woman's Auxiliary and will return to St. Louis Wednesday evening by plane to again preside at the meeting in St. Louis.

INCOME, CONSUMPTION OF GOODS DEPEND ON FITNESS

What are the dividends of health? In the first place the healthy man possesses the following characteristics which gain for him peace of mind:

1. He is strikingly unconscious of his body, which runs on well without special attention.

2. He is free from disturbing varieties of self consciousness.

3. He is easily absorbed in outside interests.

4. He meets an outrage, an insult or misfortunes in a matter-of-fact manner and never sulks or broods.

5. He manifests a general joy in living.

6. He carries a burden of heavy work and responsibilities without complaint and with little fatigue.

7. He develops a set of habits and adheres to them tenaciously.

8. He seldom craves narcotics.

9. He seldom craves any of the "psychic escapes" such as dream life, self-deception, cheap fiction and religious consolations.

There are few, indeed, who reach this state of perfection. There are few who have 100 per cent health.

Health also determines general success and failure, for success and failure result primarily from the way a man deals with persons and things.

Health also helps to determine the use a man makes of his energies and his skill.

"Thus everything from a man's ability to digest raw onions up to his ability to accept disagreeable facts and to get along with disagreeable persons depends largely on the precise kind of health he has," maintains Walter B. Pitkin, professor of journalism, Columbia University, in "Dividends of Health," an article published in the March issue of *Hygeia*, the Health Magazine.

BOOK REVIEWS

A NEW PHYSIOLOGY OF SENSATION. Based on a Study of Cardiac Action. By W. Burrige, D.M., M.A., Professor of Physiology, Lucknow University. New York: Oxford University Press, 114 Fifth Avenue. 1932. Price \$1.50.

This little book may be regarded as the sequel to *Excitability, A Cardiac Study* by the same author. The general principles governing cardiac activity, as understood by the author, are applied to the activities of the organs of sensation, including the peripheral sense organ, the conduction pathways and the brain. The discussion deals mainly with the visual mechanism and the bearing of the author's conclusions on the understanding of psychosensory processes.

A. K.

FUNGUS DISEASES. A Clinico-Mycological Text. By Harry P. Jacobson, M.D., Attending Dermatologist and Member of the Malignancy Board, Los Angeles County General Hospital. With introduction by Jay Frank Schamberg, M.D., Professor of Dermatology and Syphilology, Graduate School of Medicine, University of Pennsylvania and Howard Morrow, M.D., Clinical Professor of Dermatology, University of California Medical School. Charles C. Thomas, Springfield, Illinois. 1932. Price \$5.50.

The important and growing subject of fungus diseases has been compiled in a manner which should prove useful. The subject matter has been divided into ten chapters. The first deals with the character of fungi, their structure and classification; the following chapters with dermatomycoses, moniliasis, maduromycosis, sporotrichosis, blastomycosis, actinomycosis, coccidioides, torulosis and aspergillosis.

The cultural, morphological and histological studies are especially well done. There are numerous excellent illustrations though many of the clinical photographs are poorly selected and not clear cut. The sections dealing with systemic mycotic disease are worthy of particular attention.

An extensive bibliography accompanies each chapter.

G. V. S.

EXCITABILITY. A Cardiac Study. By W. Burrige, D.M., M.A., Oxon. Professor of Physiology Lucknow University. New York: Oxford University Press, 114 Fifth Avenue. 1932. Price \$3.85.

This book incorporates the results of a series of researches carried out by the author involving mainly perfusion experiments on the frog's heart, theoretical considerations based on these results and conclusions drawn from them. The researches have been published previously in a long series of papers and neither the details of the experimental methods employed nor the kymographic records obtained are included in the present volume, but generous use is made of diagrams based on the author's interpretation of the experimental findings.

The conception of the mechanism of muscular activity set forth differs materially from that hitherto current. The existence of excitable substances as real entities is denied; instead, it is maintained that muscle and nerve possess two sources of potential energy, which represent properties of a salt-colloidal system, viz., kinesiphores A and B. Kinesiphore A is defined as adsorption, and kinesiphore B as colloidal aggregation change. Excitation involves coagulative change with the release of adsorbed salts, and recovery the reconstitution of the finer aggregation

state with readsorption of salts. All muscular reactions are regarded as the results of the synergic activity of these two kinesiphores. On the basis of theoretical considerations, furthermore, it is assumed that the other tissues and organs of the body also function through kinesiphores.

Although we do not regard the author's far-reaching conclusions as fully warranted by his experimental findings, the book is of interest and doubtless of some value by reason of the boldness with which he disregards current doctrines and advances the conclusions arrived at in spite of their deviation from those recorded by other investigators.

A. K.

DIABETES IN CHILDHOOD AND ADOLESCENCE. By Priscilla White, M.D., Physician at the New England Deaconess Hospital, Boston, Mass. With a foreword by Elliott P. Joslin, M.D., Clinical Professor of Medicine, Harvard Medical School, etc. Illustrated with 25 engravings and a colored plate. Philadelphia: Lea & Febiger. 1932. Price \$3.75.

Dr. White has had under her direct charge the juvenile diabetics in the Joslin diabetic clinic in Boston. On June 1, 1932, the juvenile series comprised 814 patients. From this rich experience comes this book—filled with information that is indispensable to those who deal with diabetes in the young. Diabetes is a difficult subject in the child and in a single chapter in the average book on diabetes it is inadequately treated. This book discusses the hereditary aspect of the disease in great detail and the statement that one sixth of the cases of juvenile diabetes began before the fourth year of life leads one to wonder how often the disease is overlooked in the young child.

H. L. D.

ESSENTIALS OF PEDIATRIC NURSING. By Ruth Alice Perkins, R.N., B.S., Graduate of Children's Memorial School of Nursing, Chicago, etc. Illustrated with 55 engravings in the text and 6 full page colored plates. Second edition revised and enlarged. Philadelphia: F. A. Davis Company. 1932.

This book is a clear exposition of what the modern nurse should know about diseases of children. The author had her training at the Children's Memorial Hospital in Chicago so one can see the influence of that group of distinguished pediatricians Abt, Grulee, Brennemann, Hess and Aldrich, which in itself will commend the book to the nurse who seeks a thorough and authentic work on pediatric nursing. A bibliography is given at the end of each chapter for the student who wishes to do supplementary reading. At the end of each chapter there is also a list of questions and problems that bring out the important parts of the subject matter. In a supplementary chapter are suggested courses to be given by the medical staff as well as suggestions for the follow-up lectures of the supervisor.

H. L. D.

PATHOLOGY FOR NURSES. By Eugene C. Piette, M.D., Pathologist and Director of the Clinical Laboratories of the West Suburban Hospital, Oak Park, Illinois; Consultant Pathologist, Chicago State Hospital. With 65 illustrations, some in color. Philadelphia: F. A. Davis Company. 1932. Price \$1.75.

This is a small but complete and simple exposition of pathology for nurses. The chapters on general and special pathology follow the stereotyped form prescribed by the National League of Nursing Education and the outline given by the League is studiously followed. Always an attempt is made to give neces-

sary and important information without confusing detail.

The chapter on autopsies is good educational propaganda for nurses and includes a description of autopsy methods. Important instructions regarding the best methods of cooperating with the laboratory are given in excellent detail. In the discussion of blood typing the extreme importance of absolute accuracy is not sufficiently stressed. At the end of each chapter well chosen questions are given for review.

This is a good book for nurses to use in a study course in pathology. It is also valuable for ready reference.

F. C. H.

THE ANATOMY OF THE HUMAN ORBIT AND ACCESSORY ORGANS OF VISION. By S. Ernest Whitnall, M.A., M.D., B.Ch. (Oxon.), M.R.C.S., L.R.C.P. (Lond.), Professor of Anatomy, McGill University, Montreal; Late University Demonstrator of Human Anatomy, Oxford. Illustrated largely by photographs of actual dissections. Second edition. Oxford University Press, American Branch, 114 Fifth Avenue, New York. 1932. Price \$6.25.

This book is systematically and clearly written, the various sections being followed by short summaries or tables of the essential points. It is excellently illustrated with photographs of dissections supplemented by many helpful diagrams, some of them in color. Many clinical applications are made in the anatomical discussion.

It is an excellent book for the ophthalmologist and the general anatomist. The last ninety pages dealing with the nerves of the orbit and their cerebral connections are of particular interest to the neurologist. A bibliography lists 650 references.

M. D. O.

RECENT ADVANCES IN OBSTETRICS AND GYNAECOLOGY. By Aleck W. Bourne, M.A., M.B., B.Ch. (Camb.), F.R.C.S. (Eng.), F.C.O.G., Obstetric Surgeon to Out-Patients, St. Mary's Hospital, etc., and Leslie H. Williams, M.D., M.S. (Lond.), F.R.C.S. (Eng.), M.C.O.G., Obstetric Surgeon to Out-Patients, St. Mary's Hospital, etc. Third edition. With 87 illustrations. Philadelphia: P. Blakiston's Son & Co. 1932. Price \$3.50.

This is one of the notable series of "Recent Advances" in various medical specialties by renowned English authors and published in this country by Blakiston's. This edition is the product of a joint authorship, the junior editor being also a well-known English obstetric surgeon. As stated by the authors, herein are contained many revisions and deletions over previous editions. Several chapters have been contributed by special authors; e. g., the description and use of Kielland forceps was written by Doctor Kielland himself. The text is well amplified with diagrams, illustrations, tables, etc. The specific bibliographies at the end of the chapters are most useful, and the index is well prepared for ready reference.

Part I is devoted to obstetrics and Part II to gynecology. In the reviewer's opinion the subject material is better developed for obstetrical reference than for gynecological use.

The book is offered primarily for the practitioner and the student but many advocated obstetrical procedures should be attempted only by well-trained accoucheurs; e. g., the use of Willett's forceps in grasping the fetal scalp in marginal placenta praevia. The comment to the effect that Kielland forceps are not extensively used in England is a reminder of the early American admonition that "well-trained accoucheurs rarely need Kielland forceps but no others

should attempt their use." In the space allotted to relationship between the fetal head and the pelvis, it is refreshing to find the emphasis given practical clinical tests at the expense of fancy pelvimetry.

The immense practicality of the book is well indicated by this excerpt "of all the errors there is no doubt that the premature application of forceps, often to an unrotated occipitoposterior head, through an undilated cervix, is the commonest of all." A little over half of the section of obstetrics is devoted to antenatal considerations, stressing as high points such subjects as physiologic normals during pregnancy, the treatment of syphilis, the various toxemias and the antepartum hemorrhages. The discussions devoted to cesarean section and puerperal sepsis are classic, summarizing comment on the latter with the lament that so little of value has been added within the last decade. The chapter on anesthesia and analgesia is one of the best in the book.

Although a practice among well-known authors it would seem more consistent for figures and diagrams illustrating technical vaginal procedures to be presented with areas adequately shaved.

Part II is a limited but thorough consideration of gynecological advances. Cancer of the uterus is admirably discussed, interestingly reflecting the impressions of the American methods of treatment. All else being equal, surgery is given preference to radiation in this work. The space allotted sterility is too brief. Nothing of recent development is added in the treatment of prolapsus. The authors strongly contend that Sampson's theory is inadequate in explaining the origin of endometriomata. The use of words unfamiliar to American readers in classifying uterine hemorrhage, e. g., epimenorrhoea, hypomenorrhoea, is slightly confusing.

One of the best chapters in this section deals with the sex hormones. It is rather disappointing, however, not to find Friedman's name either in the text or bibliography even though the rabbit modification of the Aschheim-Zondek test is described. The chapters on physiotherapy and radiology are contributed by two special workers, both of whom carry on in the same concise, conservative vein as the authors originally conceived.

It would seem that this book is destined to assume an important position in its field.

R. R. W.

HUMAN STERILIZATION. The History of the Sexual Sterilization Movement. By J. H. Landman, Ph.D., J.D., J.S.D., The College of the City of New York. New York: The Macmillan Company. 1932. Price \$4.00.

In the first chapter the author states his concept of the eugenics movement. He tells what eugenics mean; namely, the state of being well-born; the proponents and opponents of the movement and the objective of the proponents. The presentation that follows is human sterilization in opposition to segregation. He contends that segregation has failed to relieve society of the burden of the socially undesirable and believes that human sterilization will ultimately accomplish what segregation has failed to do. Human sterilization is proposed as a social and therapeutic program. It is not a proposition to limit the production of offspring as such, but rather a means for the selective propagation of the human race. Succeeding chapters deal with an analysis of the provisions for human sterilization for social betterment. While the author expresses his own views in regard to the efficacy of human sterilization in ridding society of coccogenic peoples, he leaves the reader to draw his own conclusions as to the success and practicality of the movement.

The author has painstakingly compiled much data pertaining to the theories of who constitute the socially unfit and to the mechanistic procedure for legalizing the operation. Castration of males has been practiced for generations but human sterilization as a social therapeutic measure has had its development only within the last twenty-five years. It is significant to note that the State of California, which was the third to join the ranks of compulsory human sterilization, has to her credit approximately 62 per cent of the 12,000 persons subjected to human sterilization in the twenty-eight states that legalize the operation. The other twenty-seven states that have enacted human sterilization laws make up the remainder of 38 per cent. The author gives the Human Betterment Foundation of Pasadena, inspired by the elderly E. S. Gosney, credit for such a momentous achievement in the number of human beings sterilized in that state.

The author cites the decision of the United States Supreme Court in the case of *Buck vs. Bell* written by the recently retired Justice Oliver Wendell Holmes which attracted world wide attention. Thirty states at one time or another have enacted human sterilization laws. Twenty-seven have valid legislative enactments. A number of times the legal provisions have been tested. The famous Virginia incident was one of the first, and it would seem not only laws in states subsequently making provision for compulsory human sterilization have been patterned more or less after the Virginia law, but that decisions of the courts have also been influenced by the decision of the United States Supreme Court coming to that body on appeal from Virginia on the basis of infringement upon constitutional amendments guaranteeing certain rights to citizens.

The succeeding chapters deal with the nature of the socially inadequate, the heredity of psychotic traits, the inheritance of mental deficiency, a critique of eugenics, the operations utilized in sterilization, the effects of sterilization upon the human being, whom we shall sterilize, etc.

It is the author's belief that we lack information that will enable us to differentiate between acquired and hereditary characteristics, and that until we can be sure of the ground upon which we tread we will not secure surcease from the social ills of the inadequate by arbitrary procedure. Most laws provide for a board or commission, some specify the personnel, some are too vague as to membership, or place persons on the board who occupy a biased relationship to the patient. The author favors the right of the patient for representation at the hearing which is not provided for in many states. He decries the provision for the appointment of a Ph.D. psychologist as a member of the board because they are likely to be "too theoretical or academic." He places the physician in the same category.

The reviewer differs with him in regard to such professional individuals. It depends much upon the experience and perspective of the individuals composing such a board. Persons should be appointed not upon their class qualifications but upon personal fitness for such function. Certainly, the clinically-minded psychiatrist or psychologist, if he be unbiased in formulating his concepts, should have a viewpoint that will embrace the social welfare; and this will permit him to give due credence to the various factors entering into the improvement of the race, whether operative through human sterilization or involved in other aspects of social improvement.

W. N.

MINOR SURGERY. By Frederick Christopher, S.B., M.D., F.A.C.S., Assistant Professor of Surgery at the Northwestern University Medical School, Chicago; Attending Surgeon at the Evanston (Ill.) Hospital. With a foreword by Allen B. Kanavel, M.D., F.A.C.S., Professor of Surgery at the Northwestern University Medical School. Second edition, reset. With 687 illustrations. Philadelphia and London: W. B. Saunders Company. 1932. Price \$10.00.

This book contains practical information and one will find numerous worth while methods and helpful pointers.
W. R. H.

THE PRACTICAL MEDICINE SERIES. Comprising Eight Volumes on the Year's Progress in Medicine and Surgery. Neurology. Edited by Peter Bassoe, M.D., Clinical Professor of Neurology, Rush Medical College of the University of Chicago. Psychiatry. Edited by Franklin G. Ebaugh, A.B., M.D., Professor of Psychiatry, University of Colorado Medical School, etc. Series 1931. Chicago: The Year Book Publishers.

Sifting the wheat from the chaff in neurological and psychiatric literature for the year is a "man-sized job." It requires a vast amount of real labor, for the "chaff" is voluminous and must also be gleaned. Both Bassoe and Ebaugh seem to be endowed with infinite patience and energy and both display rare discrimination in selecting for review what is really worth while.

To the very large group of us more indolent ones they have rendered a fine service in the production of the Year Book on Neurology and Psychiatry.

M. A. B.

THE COLON, RECTUM AND ANUS. By Fred W. Rankin, B.A., M.A., M.D., F.A.C.S., Division of Surgery, The Mayo Clinic, Associate Professor of Surgery, The Mayo Foundation; J. Arnold Barger, B.S., M.D., M.S. in Medicine, F.A.C.P., Division of Surgery, The Mayo Clinic, Assistant Professor of Medicine, The Mayo Foundation, and Louis A. Buie, B.A., M.D., F.A.C.S., Section on Proctology, The Mayo Clinic, Associate Professor of Proctology, The Mayo Foundation. With 435 illustrations. Philadelphia and London: W. B. Saunders Company. 1932. Price \$9.50.

This book should be particularly useful to the practitioner who wants a comprehensive textbook on this subject. Barger discusses primarily the medical aspects, diagnosis and treatment of colitis; Rankin deals primarily with the surgery of the large bowel, while Buie covers the field of diagnosis in general and treatment of the anorectal lesions. Although Rankin does not here cover the surgery of the large bowel as fully as he did in his monograph of about one year ago, yet for most purposes the descriptions are adequate. Buie, on the other hand, has reduced into a small space his previous writings and the descriptive technic of his various operative procedures is sufficiently full so that he can be followed without the use of other references. The early chapters in this book are particularly useful in the review of anatomy and physiology of the large bowel and rectum. I do not know of any other book that gives such a satisfactory outline of the anatomy of these parts. Without effort or search the salient features are so distinctly set out that one can quickly find and digest them without being encumbered with unnecessary detail.
W. R. R.

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E. J. GOODWIN, M.D., Editor
1023 Missouri Building, St. Louis, Mo.
Telephone, Jefferson 5261.

PUBLICATION { J. C. B. DAVIS, M.D., Chairman
COMMITTEE { G. WILSE ROBINSON, M.D.
M. A. BLISS, M.D.

THE USE OF IODINE IN GOITER

WALTER BAUMGARTEN, M.D.

ST. LOUIS

For the purpose of illustrating the changes in opinion in regard to the value of iodine in the treatment of goiter, it may be desirable to review the history of its use. Up to the early part of the nineteenth century it was known empirically that burnt sponge or seaweed was effective in the control of many forms of goiter which were at that time not differentiated. The iodine content of such preparations could have been only very small, and the favorable results obtained must probably be ascribed to this fact.

With the chemical isolation of iodine in 1813¹ and its availability in greater quantity began the variation in results and the appearance of untoward and injurious effects, as well as beneficial ones. A constant difference in opinion concerning its usefulness developed from the first employment of sodium iodide by Coindet² in 1820 until practically the present time. Through the greater part of the century many good results were reported by Continental physicians, less favorable ones by English clinicians. Toward the end of the century most clinicians sounded notes of warning against its use. This arose partly through the unfavorable results of the larger doses employed and the lack of recognition of suitable cases, and partly through the introduction in 1891 and the indiscriminate use of desiccated thyroid alone or together with iodine. At the same time Baumann in 1896³ determined the fact that thyroid substance contained iodine. In the first decade of the twentieth century Theodor Kocher⁴ attempted to determine the value of iodine therapy in a collective study of the experience of many physicians. In 1910 he came to the conclusion that the effect of

iodine was so uncertain, and particularly that it so often provoked harmful results, that he lent the weight of his authority against its use. Among other conditions, he was strongly influenced by the frequent occurrence of "Iodine-Basedow," the activation by iodine of previously quiescent goiters of various sorts.

The more exact clinical and pathological study, together with experimental and statistical work, began late in this decade and was marked particularly by the fundamental investigations of Marine at Cleveland, the Rochester group, and by McClendon's soil studies. Marine⁵ established primarily that thyroid enlargements, whether accompanied by symptoms or not, were the result of iodine deficiency. Kendall⁶ in 1914 isolated thyroxin, the crystalline hormone elaborated by the thyroid. McClendon⁷ by his demonstration of lack of iodine in many soils gave the explanation of the distribution of goiter in various parts of the country.

Finally, the exact clinical studies of Neisser⁸ in 1920 gave a renewed impetus to the recognition of the favorable effects of iodine in goiter. This was greatly enhanced by Zondek⁹ who in 1921 showed that in exophthalmic goiter the basal metabolic rate was markedly reduced by the administration of iodine. In 1923 Plummer and Boothby¹⁰ presented the evidence in several hundred cases of exophthalmic goiter that the use of iodine as a preliminary measure greatly improved the condition of patients for operation and avoided almost entirely the post-operative thyroid crises. These groundbreaking observations opened the way for the detailed studies of recent years which have given a better understanding of the mechanism of iodine therapy in goiter.

It must not be assumed that there have been no drawbacks to this very considerable advance in the application of this very valuable measure. As happened in the nineteenth century, the enthusiasm which has

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accompanied the greater knowledge of the application of iodine, has led also to a deluge of unconsidered and indiscriminate medication which has been productive of great harm. It is the second purpose of this outline to present the basis of knowledge on which iodine may be safely used in the various forms of goiter.

The physiological facts of thyroid metabolism have been largely worked out or correlated by Marine,¹¹ beginning with his first publication in 1908.⁵ It is most important to consider that the normal thyroid "requires an exceedingly small amount of iodine for carrying out its function, which, so far as we now know, consists in the elaboration of an iodine-containing hormone," i. e., thyroxin. That this is true is illustrated by the facts that, (1) "25 mgm. of iodine represents the maximum storage capacity of the normal human thyroid; (2) 1 mgm. of iodine given at weekly intervals by mouth will prevent thyroid enlargement in dogs living under conditions that would otherwise produce thyroid enlargement; (3) 1 mgm. thyroxin may exert its accelerating effect on metabolism in man for as long as seventy days." Many years before surveys were made of iodine content of soil over large areas, Marine had shown experimentally that iodine deficiency was at the basis of thyroid enlargement. In his work at Akron, Ohio, he demonstrated that thyroid enlargement in children could be prevented, or made to recede, by supplying very small quantities of iodine at regular periods throughout the year. The greatest value of iodine lies in the prevention of thyroid diseases by supplying such quantities. Most forms of thyroid disease develop as a consequence of an inadequate supply of iodine.

Goiter is an enlargement of the thyroid gland and develops as the result of the effort of the gland to manufacture thyroxin from an insufficient quantity of available iodine. It is stimulated to accomplish a greater turnover than the rate at which it works on a normal supply of iodine. The result is overactivity with consequent hypertrophy. It may be said, therefore, that goiter is a compensatory or work hypertrophy in response to iodine deficiency. This deficiency may be real or relative, and may depend on one of three factors: (1) An actual deficiency may arise from the reduction or absence of iodine in food and water; (2) there may be a hypothetical diversion of a normal intake of iodine by intestinal bacteria or parasites so that an insufficient quantity is absorbed; (3) a tem-

porary or relative deficiency may be provoked, in the presence of a normal iodine intake, by greater demands on the thyroid arising from incidental conditions namely, puberty, pregnancy, infections such as tonsillitis, focal infection, tuberculosis, lues, and finally by exophthalmic goiter in which the stimulant factor is unknown. In determining the background of individual forms of goiter not sufficient recognition has been given to these factors.

Guided by his conception that functional disturbances are the fundamental causes of many thyroid diseases, Marine has classified these in the following way:

CLASSIFICATION

1. Thyroid insufficiencies:
 1. Simple goiter (endemic, etc.)
 2. Myxedema
 - Infantile
 - Adult
2. Graves' disease (exophthalmic goiter).

While on the one hand the greatest value of iodine in thyroid disease lies in prevention, on the other hand its value in treatment of these diseases is definitely limited by surrounding conditions. For the purpose of this paper myxedema will be omitted from the discussion.

Simple goiter may be controlled by replacing the normal wastage of iodine in the normal metabolic processes of the individual. This may be accomplished by supplying a daily dose of not more than 1 mgm. of iodine. This will serve to control purely functional insufficiency. The success in controlling the deformities which may develop depends on the duration of the insufficiency and on the presence of hemorrhage in the gland, cysts, calcification and the development of adenomata. Organic pathological changes of this sort may be provoked by prolonged insufficiency, but cannot be corrected by an improvement in the function of the essential thyroid tissue.

In exophthalmic goiter Marine believes the hyperactivity to be secondary to powerful stimulation either through the sympathetic nervous system or the blood or both. The essential physiological disturbance in the thyroid "is insufficiency, its reaction compensatory, and its significance symptomatic." In view of the fundamental insufficiency as far as the thyroid is concerned Marine thinks that iodine in 1 mgm. daily doses may be tried over a preliminary period of two months, and that this is not associated with danger to the patient. Most cases of the alleged production of Graves' disease by

iodine that he has seen have occurred in predisposed individuals and been due to gross abuse of iodine or desiccated thyroid. In any case he believes the benefits from iodine are limited to relieving the real or relative deficiency. No lasting benefit is to be derived from supplying the means to manufacturing more thyroxin. He disagrees¹² with Plummer's assumption of a second under-iodinized thyroxin as a poisonous substance. His reasons are, (1) that the gland is in a state of active hyperplasia and therefore is in its lowest stage of iodine content; (2) that the temporary therapeutic effect of iodine is in proportion to the iodine supplied, and (3) the thyroid from Graves' disease when fed to these patients does not increase symptoms nor benefit the patients, as iodine or normal thyroid substance does, because it contains no iodine. The mechanism of the improvement¹³ produced by iodine in exophthalmic goiter Marine believes to be due to the rapid accumulation of colloid in the alveolar spaces, which causes a pressure retention. This reduces absorption of thyroxin until such time as the cells accommodate themselves to function under the increased tension. When this point is reached more thyroxin is excreted and the symptoms of hyperthyroidism gradually reassert themselves, the individual so to speak escaping from the control of iodine medication.

In adenomatous goiter iodine is less effective because the cells in adenomata less frequently react to iodine administration with involution and storage of colloid and thyroxin (iodine¹⁴). This normal physiological response to iodine appears to have been lost by many adenomata, and it is impossible to determine even in sections which will react in the normal way.

I have dwelt at length on Marine's work because it represents the most fundamental, comprehensive and carefully thought out correlation of the known facts of thyroid physiology. Simultaneously with and since Marine's last collective review in 1927, the therapeutic application of iodine in goiter has been studied in detail, especially with reference to its use in exophthalmic goiter and in adenomata. Many of these studies lend support to Marine's observation at one point or another. All of them stress the importance of a proper appreciation of the fact that iodine is a dangerous drug, powerful for evil as well as good, and that its application must be precise, with an exact knowledge of its possibilities.

An important question is the relation of

iodine to the hyperthyroidism associated with adenomata of the thyroid (toxic adenomata) and with exophthalmic goiter. Both Starr,¹⁵ and Youmans and Kampmeier,¹⁶ believe from their work that iodine produces remissions in all cases of hyperthyroidism, toxic adenomata responding in the same way as exophthalmic goiter. This suggests that the pathological processes are similar and differ in degree rather than in kind. The percentage of cases that respond only partially or not at all are similar in each group. There is the same escape from prolonged administration of the drug and the same reaction with greater severity of hyperthyroidism when the drug is stopped. Starr points out that, under prolonged administration, increasing symptoms are the rule, and that postiodine reactions are common. He describes the sequence of events during prolonged administration as, (1) remission of the hyperthyroidism for a variable but short time; (2) gradual recurrence of symptoms and (3) rapid advance of symptoms on stopping iodine (crisis). The opinion of a number of writers is that Plummer's rigid rule of not using iodine in toxic adenomata is no longer tenable; that the smaller effect of iodine in this group depends, as Marine points out, on the variable amount of adenomatous tissue in such glands which is incapable of responding with the formation of colloid, but that there is no difference in pathogenesis.

Taking exophthalmic goiter as the characteristic condition without the complicating factor of adenoma, the Boston group of writers, under Means,¹⁷ regard the typical response to iodine as specific and comparable to the effect of thyroid in myxedema or liver extract in pernicious anemia. This implies the acceptance of exophthalmic goiter as a deficiency disease. This response consists of a progressive diminution in symptoms, in pulse rate, in basal metabolic rates, and in increased weight. In previously iodine-free cases, it reaches its maximum effect in 5 to 30 days, usually in 10 to 14 days. The rapidity of response depends on the intensity of the disease before iodine is begun, on the geographic area of origin, on the associated adenoma, if any. Furthermore, they believe that this response varies with the *stage* in which the disease exists, whether it is actively progressing or not. After the maximum effect is obtained, even under continued medication, the symptoms and signs tend to reappear. Iodine has no effect on the rate of progress of the disease and does not shorten

it. It may diminish the fierceness of the course. With removal of the drug the intensity may be redoubled, possibly progressing to the so-called thyrotoxic crisis.

When iodine is continued beyond the optimum period in which the disease is most nearly in abeyance, even though medication is afterward stopped, a prolonged period ensues in which if medication is again attempted, no remission in the original degree can be attained. This has recently been termed the "refractory period."¹⁸ It may continue for weeks or months. When the basal metabolic rate rises during the administration of iodine the severity of the disease is increasing. Omission of iodine may be followed by disappearance of refractoriness, but this may require weeks.

The range of dosage of iodine for the production of a remission is wide. The minimum appears to be 6 mgm. (gr. 1/10) of iodine. It varies much with the intensity of the disease. The drug must be supplied to the gland faster than it can be utilized in the elaboration of thyroxin in order to cause the functional change associated with the storage of colloid, and to produce a decrease in the output of thyroxin. In practice, this represents in terms of Lugol's solution 10 to 30 drops a day. As for temporary purposes large quantities do no harm it is safe to err on the side of excess.

From the standpoint of practical application, certain deductions may be drawn for the administration of iodine in hyperthyroidism. It should be given in doses well above the minimum for an average of 10 to 14 days as a preoperative measure. Frequent estimations of the basal metabolic rate determine most satisfactorily the maximum point of improvement. This dosage should be continued until the effect of thyroidectomy is complete. If iodine is found to have been given for a long time previously, it may be continued to prevent postiodine reaction, or it may be stopped to allow the postiodine period to pass and, after an adequate period, readministered in the hope of obtaining a normal remission. In severe thyrotoxic crisis the drug should be pushed in enormous doses. If residual postoperative thyrotoxic symptoms persist the drug may be continued. They may disappear under small doses (Lugol's solution minims iii daily). When symptoms increase in the face of this, it is probable that too little thyroid tissue has been removed, or that a regrowth of thyroid tissue has occurred.

With the background which the foregoing

discussion has described, Winkenwerder and McEachern¹⁹ have put out a plan of preoperative care in exophthalmic goiter and toxic adenoma which considers many aspects of the patient's problem and should prove of great value in systematizing the procedure. Iodine therapy should be reserved for the last step in this preparation, and begin only after a reasonable estimate can be made of the most favorable time for operation. The plan consists first of all of bed rest, a high caloric diet, and sedatives in an effort to ameliorate the immediate condition, with frequent basal metabolic determinations and other clinical studies. Meanwhile, existing infections should be corrected (teeth, gums, upper respiratory tract) and cardiovascular complications dealt with, such as auricular fibrillation or cardiac decompensation. These conditions may require time for adjustment and the determination of when the patient will probably be ready for operation should primarily rest upon these factors. After this conclusion has been reached, iodine should be begun approximately 10 to 14 days before this estimated time. The iodine remission to be accomplished may of course be longer in arriving, and the optimum time for operation must be determined by repeated observation of the pulse rate, basal metabolic rate, symptoms and weight. Postoperatively, iodine should be continued until danger of thyrotoxic reactions has passed.

In conclusion, it cannot be too strongly stated that iodine should be used in goiter only after a careful determination of the type of disease under consideration. Simple colloid goiter is susceptible of improvement under minimal quantities of the drug, which are materially smaller than it has been the custom to give, and for which our ideas should be radically revised in consonance with the present knowledge of thyroid physiology. Myxedema has not been touched upon in this paper but belongs to the same group of iodine deficiency diseases as colloid goiter, though it may require desiccated thyroid rather than iodine alone. Even in these conditions care and control of the dose must be continually exercised. There is a considerable body of observation and opinion among the older writers that careless iodine medication may convert a hypothyroid or a quiescent state into an active hyperthyroid condition, although Marine concludes from his own observations and a study of literature that such a misfortune is

the consequence only of unwarranted doses in already predisposed individuals.

Although there is some evidence that minute (wastage) doses of iodine may be safely given to mild or early cases, the problem in the great majority of exophthalmic goiter and toxic adenoma is a different one even though one regards these as also primarily relative deficiency diseases. In these cases, with few exceptions, iodine should be regarded as a temporary measure only for the purpose of bringing the patient into a safe condition for partial thyroidectomy, and for tiding him over the postoperative period. The greatest care should be taken to avoid iodine unless operative treatment is under consideration, and then to give it with strict relationship to the probable date when this is to be undertaken. Premature exhibition of the drug, or its employment only because a diagnosis has been made robs the patient of the protection during and after operation which may be expected from the drug if properly given, and may entail upon him, certainly a considerable loss of time before the refractory period to the drug passes and the normal remission of symptoms may be accomplished, and possibly exposure to a dangerous postiodine reaction.

912 Beaumont Medical Building.

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RECENT PROGRESS IN PREGNANCY TESTS

FRED B. KYGER, M.D.
KANSAS CITY, MO.

Progress in the diagnosis of pregnancy remained practically at a standstill until the last few years. Since normal pregnancy is hard to diagnose clinically before the eighth week, men interested in the question had vainly tried to solve the problem. The need for such a test is without question. Surgeons have performed operations for tumors and found a normal pregnancy. Internists have been baffled by the vomiting of pregnancy, and we have all been chagrined at times after following-up our pelvic diagnoses. At times, even after the abdomen is opened, the condition of the uterus is puzzling. Therefore any laboratory procedure definite enough in its results to be reliable is an aid to every practitioner.

Most of the early tests were based on the sugar tolerance changes. It is a physiological fact that in pregnant women the sugar metabolism is affected and the sugar threshold is lowered. These tests have a fair degree of accuracy but the percentages of success are not definite enough for close diagnosis.

The next test which offered real possibilities was the sedimentation test. This test is based on the rapidity of sedimentation of blood which in the adult pregnant woman is from 20 to 35 minutes in comparison with the normal rate of 4 to 6 hours. I have been much interested in this test and ran a series at my office during 1927-28 which showed that it was quite accurate after the 12th week, although often appearing much earlier. It was then and still is a help in differential diagnosis of pregnancy from certain types of abdominal tumors, ovarian cysts, fibroids, etc. However, the fact that the test appears later in pregnancy when other physical signs are also present often destroys its usefulness. An additional error in these cases is that the test is also markedly positive in acute inflammatory conditions of the pelvis. The sedimentation test, then, has only a limited sphere in the diagnosis of pregnancy. However, I believe this test to be of great value in other branches of gynecological diagnosis. The technic is simpler and less time consuming than a blood count, and many authorities believe it to be of more value than a blood count. Considering the length of time it has been before the profession, it has not been so extensively employed in this country as in European countries. I recommend that you add this simple test to your laboratory work.

The first advance along this line was placed before the medical profession in 1928 when Zondek and Aschheim¹ published an article which brought forward a new era in pelvic diagnosis. As early as 1926 Zondek had shown that estrus could be produced in immature mice by the injection of ovarian hormone. Then he implanted anterior pituitary in immature mice and the ovaries showed follicular development. He also showed that enormous quantities of anterior pituitary hormone were found in the urine of pregnant women which persisted until about eight days after delivery. With these facts as a guide he then demonstrated that the injection of urine from the pregnant woman into immature female mice of a picked standard produced certain characteristic changes in the ovaries of the animals. The ovaries showed formation of corpora lutea and corpora hemorrhagica (so-called Blut-punkte) in distinct enough changes that the test could be readily interpreted. Basing his experiments on the same principles laid down by Aschheim and Zondek, an American physiologist (Friedman of the University of Pennsylvania) found the same results by using rabbits. He found that suitable rabbits were easier to obtain, the test could be obtained earlier, was easier to read and had other advantages over the use of mice. So Friedman deserves the credit for the simplification of the technic and his method is the one that has been adopted extensively in America.

Another test proposed shortly after this was the one now known as the Bercovitz test for pregnancy. He found by instilling a few drops of the patient's own blood into one eye that in most cases of pregnancy there was a definite reaction. This reaction consisted of a contraction or dilatation or alternation of the pupil of the eye treated. King² of Tulane University reporting on the Bercovitz test stated after a trial number of cases that the reaction appears within thirty seconds and persists for about three minutes. In only about 70 per cent of the cases was the reaction clear cut enough for a positive diagnosis. However, we may soon have some such simple test as this.

G. L. Kelly of the University of Georgia has recently reported a new test using female albino rats. He bases his test on premature opening of vaginal lumen in certain weight rats after intraperitoneal injection of urine from a pregnant woman. This stimulation is due to action of anterior pituitary hormone. Advantages he claims for this method are simplicity and ease of reading of results. As yet his procedure has

not had sufficient number of investigators to recommend it, although his published findings promise well.

The Friedman modification of the Aschheim-Zondek test has now had widespread trial throughout America. Kurzrok³ recently reported on 1000 consecutive tests with a percentage of gross errors of less than 2 per cent. His failures were, incorrect positive, 2 cases; incorrect negative, 10 cases. A few of these errors were due to extremely early tests which later became positive. Faulty technic may account for some of the errors. Helwig⁴ of Wichita reported a series of cases with a very low percentage of error. Black⁵ of Tennessee collected from the literature and from his own cases 4802 tests with an error percentage of only 1.07 per cent. Positive tests may be obtained in from 2 to 3 weeks after conception. So long as there is living attached chorionic tissue the test is positive. While some of these reports seem to show too small a percentage of error, yet even a larger percentage would still make it available for laboratory work.

There is a very fertile and widespread field for the application of the Zondek-Aschheim. Some of these practical applications are:

Differential diagnosis between tumor and pregnancy.

Differential diagnosis between indefinite pelvic masses and pregnancy.

Diagnosis of pregnancy in a nursing mother who has not menstruated.

Diagnosis of persistent vomiting of pregnancy.

Use in medicolegal cases and rape with subsequent pregnancy.

Value for advising immediate marriage.

Diagnosis of amenorrhea of endocrine disturbances and of the menopause from that of pregnancy.

Diagnosis of tubal pregnancy and rupture.

Diagnosis of secondary malignancy after a hydatiform mole has been expelled.

Diagnosis of intrauterine death of the fetus.

In conclusion, I quote one of our prominent American gynecologists, who said, "There has not been presented a more valuable test to the gynecologist, obstetrician and internist than the sex hormone test for pregnancy."

510 Professional Building.

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IMPORTANCE OF ROENTGEN RAY DIAGNOSIS OF SPONTANEOUS PNEUMOPERITONEUM AND TRAUMATIC PNEUMO- PERITONEUM

EDGAR W. SPINZIG, M.D.

ST. LOUIS

Pneumoperitoneum is the presence of free gas in the peritoneal cavity. When gas gains access to the peritoneal cavity through the perforation of a pathological process in a hollow viscus, the condition is known as spontaneous pneumoperitoneum; when its origin is through the perforation of a hollow viscus due to injury, a traumatic pneumoperitoneum exists.

Credit for the original idea of air inflation of the peritoneal cavity in conjunction with roentgen ray belongs to Kelling, according to Stewart and Stein.²³ This work was done in 1902 in two humans, one a case of ascites the other a case of carcinoma of the stomach. In 1910, Jacobeus of Stockholm revived the method and between 1910 and 1919 Weber, Lorey, Rautenberg, Meyer Betz, Goetze and A. Schmidt utilized artificial pneumoperitoneum in various conditions. Stewart²³ reported in 1919 that he had examined 37 cases and he was probably the first to employ the procedure in this country. This brief history of artificial pneumoperitoneum is mentioned simply because it seems strange that the free gas seen in spontaneous pneumoperitoneum was not recognized by roentgen ray until about 1911 and reported in 1915 by German observers and in 1917 by Americans.

The presence of spontaneous pneumoperitoneum in cases of perforation was first recognized by Popper²⁰ in August, 1915, when he reported a case he had seen in 1911. July 5, 1911, Eisler of the Kienbock Institute fluoroscoped the case and found displacement of the duodenum and pylorus due to adhesions, presumably from ulcer. July 9 the patient developed an acute condition in the abdomen which in the light of the previous roentgen ray examination Popper thought was probably a perforation. The patient improved so that spontaneous recovery was probably taking place, when tympany was noted over the liver. July 17, roentgen ray examination revealed gas under the right diaphragm, sickle-shaped, which disappeared on changing position of the patient. The differential diagnosis was between subphrenic gas and the anomalous position of the colon of Chilaiditi; Eisler and Kienbock thought it was

the latter but Popper felt that a perforation was present. July 20 roentgen ray revealed a larger area of translucence which had a horizontal lower border and the liver shadow was invisible. The horizontal edge gave a wave-like motion when the patient was shaken. The diagnosis was subphrenic abscess, an operation was performed and the abscess found. The course and outcome of the case confirmed Popper's ideas and he gave a detailed description of the differential roentgen ray diagnosis of free subphrenic gas and hepatoptosis. Popper said the sign was little known but is of value as an early finding in perforation of gastric and duodenal ulcers, injuries to the intestines and perforative appendicitis. The diagrams accompanying the article are very descriptive and clearly illustrate the difference between free subphrenic gas, the gas of subdiaphragmatic abscess and hepatoptosis.

Weiland³⁰ has been accredited with observing free gas under the diaphragm four months prior to Popper. Weiland had the opinion that an encapsulated perforation containing gas was behind the liver in his case and he does not mention the significance of free gas as an early sign as did Popper. Weiland's case at autopsy revealed a duodenal ulcer perforated into the pancreas and an associated hepatoptosis, with the colon between the liver and the diaphragm.

In 1916 Lenk,¹⁴ a German military surgeon, emphasized the necessity of determining the presence of perforation of hollow viscera in gunshot wounds of the abdomen; he felt that one cannot depend entirely on physical findings and that the roentgen ray was very helpful in disclosing free gas under the diaphragm. He discussed the differential diagnosis and said the sign is of value in civil practice in detecting perforations.

In American literature, apparently the first case of perforated hollow viscus diagnosed by the appearance of gas under the right diaphragm on the radiograph was that recorded in 1917 by Martin.¹⁶ LeWald discovered the gas under the right diaphragm in Martin's case during the roentgen ray examination and ventured the suggestion of free gas in the peritoneal cavity. In 1918 Dandy⁸ called attention to the fact that perforations of hollow viscera could be detected by roentgen ray and in 1919 reported a case of typhoid ulcer perforation of the colon which had been radiographed by Baetjer and showed a spontaneous pneumoperitoneum.

Perforation of a hollow viscus is of relatively frequent occurrence, yet it is only in recent years that the almost unmistakable evidence of this condition as manifested by spontaneous

From the Radiology Departments of Lutheran Hospital and City Hospitals No. 1 and No. 2.

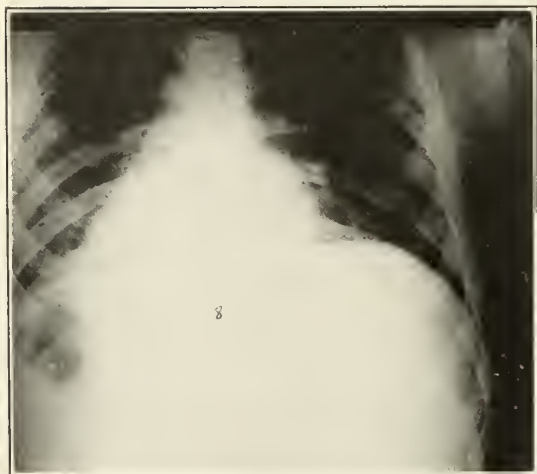


Fig. 1. Minute amount of gas under right diaphragm (between arrows) following gunshot wound of abdomen. Operation revealed perforation of small intestine. Recovered.

pneumoperitoneum has been recognized on the radiograph. Since the cases previously cited, several reports of single cases have been published, the majority of them being due to perforated peptic ulcer. In 1917 Kenez¹³ reported a case of spontaneous pneumoperitoneum due to the rupture of a tuberculous ulcer of the appendix. In 1921 Kellogg¹² reported a case of perforated gastric ulcer, and in 1922 Dahm⁷ a perforated gastric ulcer on the greater curvature. Dahm rightly felt that the term pneumothorax subphrenicus is a misnomer and that the condition should be called pneumoperitoneum. Geier⁹ in 1929 and Warfield²⁸ in 1930 and Brown² in 1932, each report a case of perforated peptic ulcer. Jenkinson¹¹ in 1930 reported a case which revealed unmistakable evidence of gas under the right diaphragm, but at operation no perforation was found. Roentgen ray ex-

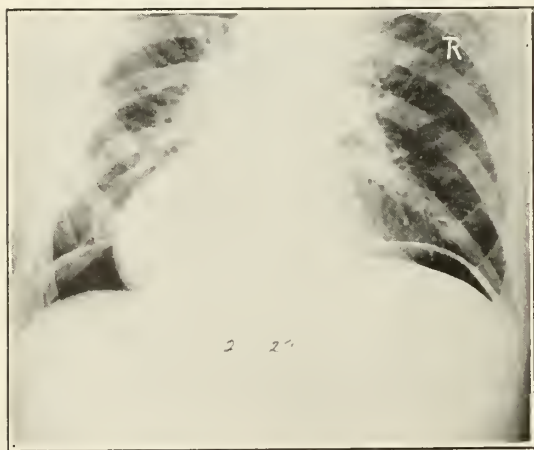


Fig. 2. Moderate spontaneous pneumoperitoneum. Roentgen ray examination 4 hours after perforation. Operation 7 hours after perforation revealed perforated duodenal ulcer. Recovery. Characteristic sickle-shaped area of gas.

amination of the stomach later revealed a duodenal deformity—duodenal ulcer. Observers reported several cases of perforation of ulcers detected by roentgen ray were Schottmuller²² in 1921, three cases; Copher⁵ in 1924, five cases; Vaughan and Brams²⁵ in 1924, 15 cases 13 of which showed gas on the roentgen ray examination; MacCharles¹⁵ in 1925, two cases; Vaughan and Brams²⁶ in a second report in 1925, 29 cases 26 of which revealed roentgen ray evidence of perforation; Cottle and Spalding⁶ in 1927, 8 cases occurring in sailors of the Pacific Fleet; Pendergrass and Kirk¹⁹ in 1929, two cases, and Vaughan and Singer²⁷ in 1929 published the previously reported cases of Vaughan and Brams, adding 43 cases, making a total of 72. In practically all the above cases except 9 in the last group, operation or autopsy confirmed the findings.

The importance of the presence of spontaneous pneumoperitoneum should be fully understood by the clinician, for it always means the perforation of a hollow viscus when artificial pneumoperitoneum can be excluded. It is only in more recent years, as the increasing case reports show, that its value and constancy in perforation has been somewhat appreciated, but the use of roentgen ray in acute abdominal cases and abdominal injuries is still too limited. The failure to utilize a procedure in this era of progress which will prove correct in 85 per cent of the cases examined (Vaughan & Singer²⁷) indicates either a lack of familiarity with its value or fixed ideas. Certain it is that there are men who feel that they can detect pneumoperitoneum by physical diagnosis. This may be possible in the classical textbook case when the liver is surrounded by considerable gas and a diminution in the normal liver dullness can be detected by percussion, but some cases reveal such a minute amount of gas under the diaphragm that the percussion note is not appreciably altered. The presence of a rigid abdomen and tenderness are not pathognomonic since such findings are common in nonperforating conditions. Since the time interval between perforation and operation is so vital to the patient, it is practically imperative that one use a simple, safe measure which will give a positive diagnosis in so large a percentage of cases of perforation. Moynihan¹⁸ states, "When the ulcer is in the stomach the signs are those of general peritoneal involvement; when the ulcer is duodenal the course taken by extravasated fluids leads to a more acute and an earlier involvement of the peritoneum on the right side, and in the right iliac fossa. The clinical picture of appendicitis is copied with such accuracy that out of 49 cases tabulated by me, in 18 the

first incision was made over the appendix after the diagnosis of acute appendicitis has been made." W. J. Mayo¹⁷ makes a similar statement in which he admits having made negative explorations of the appendix in his earliest cases only to find a perforation of the duodenum later. The experiences of surgeons of such ability must be seriously considered.

Since free gas in the peritoneal cavity will seek the highest level, it will accumulate between the dome of the right diaphragm and the liver when the patient is placed in the upright position, and produce a characteristic sickle-shaped, translucent area on the radiograph. The gas bubble will shift when the patient is put in the left lateral position, and lie between the liver and the right lateral abdominal wall. There is usually no restriction of the movement of the diaphragm and no fluid level is seen. The diaphragm is clearly visible and the superior surface of the liver can be identified. The amount of gas seen varies from such small quantities as give only a hairline area of translucence, to amounts so large that the viscera are markedly displaced and the abdomen is greatly distended. In one case of traumatic pneumoperitoneum entering the hospital 14 days after a fall on the ice which caused a rupture of the ileum, the distention was so extreme that the patient was referred to the roentgen ray department for gastro-intestinal studies to determine the presence of an obstruction.

The presence of pneumoperitoneum can be determined in a very few minutes without special preparation, by having the patient sit erect and making an exposure from the posterior, with the film against the anterior chest wall. It is well to have the patient lie in the left lateral position on the way to the roentgen ray department so that the gas in the stomach will rise to the pylorus and the stomach contents will gravitate to the fundus. While this position keeps the gas in the region of the pylorus, where most spontaneous perforations occur, it also permits the gas already in the peritoneal cavity to accumulate between the liver and the right lateral abdominal wall. The correct position of the patient during the examination is very essential. Failure to visualize gas in some cases of perforation is because surgeons are not specific in their requests and simply ask for flat plate of the abdomen; this naturally will not reveal gas under the diaphragm. Some observers make only a fluoroscopic examination. This is inadequate; routine films should be made in all cases, because in some cases the amount of gas is so small that it can hardly be detected on a film and will certainly be overlooked on the screen. In addition, there is always the possi-



Fig. 3. Enormous pneumoperitoneum due to traumatic rupture of ileum from fall on icy sidewalk 14 days before admission to hospital. Operation. Died.

bility of litigation of some sort, in which the film will be very essential.

No bad results have been encountered in any case by assuming the upright position and time consumed is negligible since the examination can be made and completed long before the surgeon and the operating room are ready for action.

Vaughan and Singer²⁷ have presented a series of 72 cases of perforated peptic ulcer and have ably discussed the value of the finding of free gas under the right diaphragm in perforations. These observers found that 85.7 per cent of a series of 63 cases of proved peptic ulcer showed spontaneous pneumoperitoneum shortly after perforation.

In the series of cases to be presented in this



Fig. 4. Translucent area under right diaphragm due to anomalous colon or partial temporary hepatoptosis. (See Fig. 5.)

report, the roentgenological aspect will be discussed, showing that every case of free gas under the right diaphragm is an indication of a ruptured hollow viscus, provided that artificial pneumoperitoneum, tubal insufflation or recent abdominal operation can be ruled out. The presence of free gas will not, however, assist in locating the perforation.

This series is composed of 21 cases showing free gas under the right diaphragm and the perforated hollow viscus was found in each case at operation or autopsy. Twelve of the cases were due to spontaneous perforation of a hollow viscus. Of these 12 cases, 6 were gastric ulcers, 4 were duodenal ulcers, 1 was a perforated appendix and one was a twisted, perforated ileum embedded in an appendiceal abscess. The other 9 cases were perforations due to trauma of which 5 cases were gunshot wounds, 3 were blunt trauma (2 falls on sidewalk and 1 run over by auto) and 1 was a stab wound. The anatomical lesions of the 9 traumatic cases were various combinations of perforations of the stomach, duodenum, jejunum, ileum and colon.

The shortest time interval between perforation in the spontaneous cases and detection of pneumoperitoneum by roentgen ray was two and one third hours; the longest was 10 days (according to history). In the traumatic cases the time of the actual accident is in most cases not recorded, but the shortest interval available was one and one half hours, and the longest interval was 14 days. The shortest interval recorded in the literature was the case of Geier⁹ in which a proved perforation occurred while the history was being taken and the gas was discovered by roentgen ray 10 minutes later.

Since the time interval between perforation and operation is very vital to the patient, it is interesting to note that the shortest interval in the spontaneous group was three and one half hours in a case of perforated duodenal ulcer, and the longest interval was 10 days in a case of perforated ileum adherent to an appendiceal abscess. Of these 12 spontaneous cases, 3 died, the time between perforation and operation having been 10 days in the first case, ten and three fourths hours in the second case, and the duration in the third case which was moribund on admission was unknown. Of the traumatic group the shortest interval was 3 hours in a case of gunshot perforation of the stomach, colon and liver, and the longest interval was 15 days, in a case of blunt trauma resulting in rupture of the ileum. Eight out of 9 traumatic cases died, the high mortality probably being due to shock, hemorrhage and associated injuries to the liver, kidney, etc., which were found in several cases. The importance of early diagnosis of spontaneous pneumoperitoneum is seen



Fig. 5. Same case as fig. 4. Barium enema one week later revealed hepatic flexure of colon disengaged from right subphrenic area and lying under liver.

in the 9 cases which recovered. Six of these patients were operated on within 8 hours of the perforation, one after eighteen and one half hours; the interval of the other two is unknown. The roentgen ray examination should therefore be made as soon as possible after physical findings indicate a possible perforated hollow viscus; it should be an aid in arriving at a conclusion but should not supplant physical examination.

All translucent areas under the right diaphragm are not due to free gas; this phenomenon must be differentiated from other conditions which may be confusing. The differential diagnosis will include subphrenic abscess, hepatoposis, anomalous positions of the colon and dextrocardia.

The gas seen in association with subphrenic abscesses was described on the radiograph as early as 1901 by Weinberger.³¹ In 1910 Alwens¹ reported a case following rupture of a duodenal ulcer which showed fluid between the liver and the diaphragm, above which was gas. In the same year Reinecke²¹ saw a boy 10 years old who developed a subphrenic abscess following appendicitis. Roentgen ray revealed fluid and gas under the diaphragm. It will be recalled that Popper's²⁰ case also developed an abscess under the diaphragm, ultimately, and he shows a definite diagram which illustrates the characteristics of this condition and the differ-

ence from free gas. The gas in subphrenic abscess lies under the diaphragm but the lower border, instead of being convex and following the liver, has a horizontal border when the patient is in the upright position. This border is due to fluid which retains its horizontal position and obscures the liver shadow in every position the patient assumes. Upon shaking the patient, fluid waves can be discerned. The gas bubble, usually encapsulated, does not disappear or permit the liver and diaphragm to approximate when the patient assumes the recumbent position as in the case of free gas.

Another condition which may be confused with subphrenic gas is hepatoptosis. This condition was considered in the discussion of the differential diagnosis of subphrenic abscess with gas by Weinberger³¹ in 1901. Hepatoptosis was the actual condition in Weiland's³⁰ case, which he thought was a localized abscess. More recently Schottmuller,²² Vaughan and Brams,²⁶ and Pendergrass and Kirk¹⁹ called attention to the necessity of considering floating liver. The latter authors report 2 cases one of which at first was thought to be a spontaneous pneumoperitoneum but subsequently the correct diagnosis was established. Operation in this case revealed pancreatitis and a displacement of the liver with the colon between the liver and the diaphragm.

Hepatoptosis, which is a primary complete displacement of the entire liver from the diaphragm, was first described by Heister in 1754. According to Graham,¹⁰ Faure gave Heister this credit in 1892. Owing to the position of the liver, the colon becomes interposed between the liver and the diaphragm producing an area of translucence. The roentgen ray characteristics of this condition were illustrated by Popper²⁰ and Chilaidditi³ who show that the area of gas is widest at the lateral abdominal wall, tapering to a point near the median line. The brilliance of the gas area is not constant owing to the intestinal contents and its shape will vary because of peristalsis. The gas will not disappear when the position of the patient is changed and the haustra of the colon are visible. A barium meal or an enema will be of value in eliminating this rather unusual condition.

The roentgen ray appearance of spontaneous pneumoperitoneum is also simulated when the colon is anomalously located between the liver and the diaphragm. This condition was recognized, among other anomalies of the colon, by Curschmann, according to Swezey and Black.²⁴ Curschmann in 1894 had one case which was mistaken for spontaneous pneumoperitoneum clinically. Swezey and Black in 1920 reported two cases, one of them discovered by Wasson on the radiograph. Wasson and Bouslog²⁹ in

1932 reported two cases, one of which had been previously reported by Swezey and Black. Since the colon lies between the liver and the diaphragm, the same condition prevails as described above under hepatoptosis. It is possible that the anomalous colons of these authors and hepatoptosis are one and the same condition. Roentgenographically, the characteristics should be similar and the barium enema will decide whether the colon is displaced or whether a pneumoperitoneum is present.

In cases of dextrocardia without transposition of the abdominal viscera, the heart is on the right side but the stomach remains on the left side. In reference to the heart, the gas bubble may seem to be on the right side, but the proper placing of right and left markers will identify the true relationship of the viscera, especially after the administration of a barium meal which will identify the gas as the magenblasse. This gas bubble is not sickle-shaped and will not lie between the liver and the right lateral abdominal wall when the patient lies on the left side.

Free gas under the right diaphragm as a result of recent laparotomy, tubal insufflation, or artificial pneumoperitoneum can be eliminated by the history. The appearances by roentgen ray are identical with free gas due to a perforated hollow viscus.

SUMMARY

1. The history of the roentgenological finding of spontaneous and traumatic pneumoperitoneum as an indication of a perforated hollow viscus is briefly reviewed.
2. The detection of free gas by roentgen ray and by physical diagnosis and its importance to the clinician is discussed.
3. The roentgen characteristics of free gas in the peritoneal cavity are described.
4. The method of examination of the patient is described.
5. Twelve cases of spontaneous pneumoperitoneum and 9 cases of traumatic pneumoperitoneum are reported.
6. The differential diagnosis of translucent areas under the right diaphragm is discussed, including spontaneous pneumoperitoneum subphrenic abscess with gas, hepatoptosis, anomalous position of the colon between the diaphragm and the liver, the dextrocardia, free gas after laparotomy, tubal insufflation and artificial pneumoperitoneum.

316 Metropolitan Building.

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PANCREATIC NECROSIS

An exceptional case of acute necrosis of the pancreas is reported by Silik H. Polayes, William Linder and Robert E. Rothenberg, Brooklyn (Journal A. M. A., April 15, 1933), in which almost the entire organ was spontaneously extruded through the drainage wound. Despite the great loss of pancreatic tissue and grave complications that arose (abscess formation and duodenal fistula followed by a jejunostomy), the carbohydrate metabolism and pancreatic digestion showed remarkably little impairment, the patient ultimately making an excellent recovery.

MESENTERIC THROMBOSIS FOLLOWING APPENDICITIS; RESECTION; RECOVERY

WALTER M. JONES, M.D.

ST. LOUIS

Recovery following a mesenteric thrombosis due to infection is so rare that I feel such a case should be reported. To my surprise in reviewing the literature I find there are many cases of mesenteric thrombosis on record as having recovered, but the thrombosis was usually the primary cause for the operation and followed such conditions as enteritis, fibroids, vascular diseases, volvulus, etc. However, recovery is rare when there has been an operation primarily for appendicitis or other infective process and later a secondary operation for the thrombosis. The patient's chances for recovery are much greater when a beginning thrombosis of the ileocecal vein is discovered at the time of the primary operation and ligated above the thrombosis (Braun's operation) than when it is necessary to reopen the abdomen several days later. The Wilms-Braun's operation with recovery demonstrates nicely a semiprophyllactic treatment for the condition under discussion.

For several reasons it requires a very courageous and prompt decision to reoperate. In the first place, the surgeon doesn't feel sure of his diagnosis but does feel sure that if a mesenteric thrombosis exists the chances of recovery are rare even with the best of luck; the patient has just been through one serious affair which the surgeon feels he has conquered and then to be confronted with another and worse ordeal places him in a most unhappy frame of mind. This means delay. Usually the patient's relatives are much more difficult to handle than is the patient and often cause the surgeon to feel that he should have studied law instead of medicine; and with more consultation there is more delay. In fact, the surgeon is "between the devil and the deep blue sea" and has to fight himself because he too wants to delay hoping that Nature will unkink a kink and straighten out everything, but he knows that if there is a mesenteric thrombosis he can give the patient a 1 per cent or 2 per cent chance for recovery by surgery against 100 per cent mortality without it.

Mesenteric thrombosis has a rather definite clinical picture, and since studying the literature I feel more optimistic and hope this report will at least cause others to catalogue mesenteric thrombosis in their mental index as one of the postoperative catastrophes following acute appendicitis.

ETIOLOGY

Mesenteric thrombosis following appendicitis is of the ascending venous type. The appendix

becomes swollen, slowing up the circulation and the infection (usually the colon type) thrives, travels to the ileocecal vein, thence up one of the trunks to the small bowel or liver or both. Stasis of the portal system helps. It may follow other infections, severe enterides, puerperal infections, phlebitis of lower extremities, sepsis, typhoid, cachexias or even local disease of the vein wall, as syphilis, etc.

PATHOLOGY

The abdomen usually contains free fluid, often bloody. The intestines are cyanotic and heavy, dragging the mesentery down over the brim of the pelvis. The infarcted area may show only a simple hyperemia or may be gangrenous, even with perforation and peritonitis. Only about 60 per cent shows a line of demarcation. Extravasated blood between the intestinal layers forms dark tumors of varying size and shape in the infarcted loop. The intestinal contents are usually bloody and there may be ulceration of the intestinal mucosa. The intestine is seldom ballooned up with gas. The affected mesentery (very often a triangular area) is thickened and edematous and the little hardened vessels can be palpated. At times long stringy clots may be removed from the veins and the offending organism cultured from them. The mesenteric glands are enlarged and the lymph tissue swollen. It is difficult at times to decide when the gangrene has reached its limit.

SYMPTOMS

The surgeon's first thought is usually intestinal obstruction. The abdominal pain is severe. There are nausea and vomiting the latter often becoming stercoraceous. There may be either obstipation or diarrhea and bloody stools in about 40 per cent of the cases. There is marked abdominal tenderness, often to left of midline. The abdomen is not rigid, as a rule. Enemata are well tolerated and with surprisingly good results. Hiccough may be a troublesome symptom and chills are important, although not necessarily present. The temperature is usually normal or subnormal. The white count is up and sugar is often found in the urine.

Even with a good history and a clear cut picture the diagnosis is usually made after the abdomen is opened. Nevertheless, the alert surgeon should at least think of mesenteric thrombosis along with intestinal obstruction, intussusception, volvulus, etc., when cataloguing the possibilities.

The treatment is surgical and the sooner the better. As a general rule it is perhaps better to resect and leave both ends of the bowel open and fastened in the abdominal wound with anastomosis later; but if not too late the patient's comfort and convalescence will be enhanced by im-

mediate end to end anastomosis. If the entire mesentery is thrombosed there is nothing to do but close the abdomen.

The prognosis is not good with surgery and much worse without it. No doubt, when we become more familiar with such cases and operate earlier the outlook will become much brighter. On the other hand, when the profession and the patients have learned to operate early in acute appendicitis we will have fewer of these disasters.

REPORT OF CASE

White male, aged 9, student. Family history good. Had measles, mumps and pertussis. Previous health good. Patient carried into office about 4 a. m., complaining of severe stomach ache. History of having fallen and struck abdomen the day before, after which he became nauseated and vomited. The pain was first about the umbilicus and later centered in the right lower quadrant.

Patient appeared very sick. The whole abdomen was board-like with most tenderness over McBurney's point. Was ordered to St. Anthony's Hospital immediately for operation where he arrived at 4:45 a. m. Temperature 37° C., pulse 106, respiration 26. The blood count showed 21,800 (lymphocytes 12 per cent, polymorphonuclears and stabs 35 per cent, segments 47 per cent, large mononuclears 6 per cent). The urine showed a trace of albumin, a few hyalin casts and a few white blood cells. Patient continued vomiting yellowish fluid. Abdomen was prepared and he was sent to operating room at 7:35 a. m.

Under ether anesthesia, abdomen was opened over McBurney's point by muscle splitting method; pus escaped, cecum and appendix delivered, mesentery ligated and severed, appendix ligated and severed, stump cauterized and inverted by purse-string suture, small rubber tissue drain inserted and abdomen closed.

The appendix was gangrenous at the outer third and a small perforation was present (section showed an acute suppurative inflammation with excessive ulceration at one point). Patient was returned to bed in good condition.

May 29. Usual care, nausea but no vomiting. Temperature 98.2 to 102.2, pulse 108 to 120, respiration 24 to 26. Normal salt solution 1000 c.c. and morphine twice for pain. Wound was dressed on account of profuse drainage.

May 30. Treatment continued as above, patient resting comfortably, voiding freely, temperature 101.8 in the morning and down to 100 at 6 p. m. Codeine 1/10 grain for restlessness. Moderate amount of sanguineous drainage. Nurse noted pain in left lower abdomen.

May 31. Marked improvement, rested and slept well, bright, hungry. Temperature 99.2, pulse 90, respiration 22. Patient enjoyed coffee and other fluids. Enema given with good results. Only slight drainage.

June 1. Pain in lower abdomen. Drain loosened. Enema with good results. Temperature 98.8, pulse 80, respiration 24, but anxious expression (not so well). Little nausea. Small amount of vomitus. Slight abdominal distention, more marked on left side, later, vomiting and pain increased. Codeine given. Another good result with enema but pain no better.

June 2. Vomiting increased and became stercoraceous. Pain and tenderness severe, especially to left and just below umbilicus where a small mass could be palpated. Temperature not over 100° F.,

pulse 108, respiration 24. Pinched anxious expression. Dr. Pulliam saw patient in consultation and thought that he had a partial intestinal obstruction. Flatus still expelled per enema, but pain worse. Saline and glucose given intravenously. Vomiting became less. Very little if any distention and no chills.

June 3. Fifth postoperative day. Condition worse. Pain increased. Temperature subnormal. The condition was explained to parents and patient sent to operating room at 10:45 a. m. for second operation.

Under ether, abdomen was opened through left rectus. Large amount of serosanguineous fluid escaped. The intestines lay flat in the belly and did not tend to push out the wound. The small bowel was dark, soggy and heavy. The part down in the pelvis had drawn the mesentery taut over the brim and upon lifting up these coils and relaxing the mesentery the entire bowel took on a better color. This was noted two or three times and was the reason when the patient was put back to bed for placing him on left side with pelvis raised.

Directly under the center of our incision where we had previously felt the small mass was a loop of upper ileum about three feet long showing many hemorrhagic infarctions from pin point to the size of a silver dollar. These edematous areas were subserous and contained dark, sticky, bloody fluid. There were no perforations. The mesentery of the gangrenous loop was of triangular shape, thick, edematous, dark and contained many hard worm-like thrombosed vessels. The small bowel was not distended with gas but was rather heavy and relaxed.

The infarcted loop was quickly resected and an end to end anastomosis made. The triangular affected mesentery was ligated close to the mesenteric root at the spinal column and the rent in the mesentery was closed by catgut. Abdomen was closed in layers with three heavy silk stay sutures and without drainage.

Convalescence from the second operation was very smooth and uncomplicated. The first evening the temperature rose to 103 and then gradually came down to normal where it remained. Fluids were forced (saline and glucose). Peristalsis kept quiet by sedatives, etc. The bowels moved on the sixth postoperative day and caused no more trouble thereafter.

The wound drained profusely the first few days, then gradually stopped and both abdominal wounds healed nicely and firmly. Patient was discharged June 19, 1932, and was soon back at play as usual.

It would be almost impossible to study the history of mesenteric thrombosis following infection and not include mesenteric thrombosis due to all causes. The history starts early in the nineteenth century and holds many happy surprises for one not familiar with it. There have been several hundred cases reported, but very few recoveries when the thrombosis follows an acute infective process. The literature is mostly German. We learn that mesenteric thrombosis has a definite clinical picture and that it is possible to resect the gangrenous loop with its mesentery and stop the infection. We learn that the majority of surgeons consider the mortality 100 per cent without operation yet there is a case on record with recovery and no operation.

According to some writers the superior mesenteric artery is an end artery at least function-

ally but it is possible to have a collateral circulation establish itself. In the majority of the few cases of recovery following operation the ends of the bowel were brought out of the abdominal wound and left open and anastomosed later.

In 1842¹ Virchow was the first to call attention to the pathological condition of mesenteric thrombosis. In 1843² Tiedeman described the condition clinically.

In 1875 Moos³ and Cohen⁴ reported cases of embolism of the superior mesenteric artery with recovery, and Litten⁵ described the clinical picture of mesenteric thrombosis. In 1876 H. Fagge⁶ mentioned the subject. In 1880 Moyes⁷ outlined and classified the symptoms. He reviewed the literature, beginning with Tiedeman's article in 1843; he made no mention of the involvement of the appendix but stated that in *three cases of recovery* up to that time the location of the embolus was doubtful. In 1881 F. Taylor⁸ reported two cases where the thrombosis was diagnosed at autopsy. In 1883 S. W. Gull⁹ reviewed cases of Fagge and Taylor and reported a case of possible thrombosis of the superior mesenteric and renal veins with detachment of several valvulae committentes of the jejunum with recovery. In 1888 Finlayson¹⁰ reported a case of embolus of the mesenteric artery which recovered. There was no mention of the appendix. In the discussion M. Anderson reported another case, diagnosed at autopsy. In 1894 Watson¹¹ quoted Chiene as having reported a recovery from thrombosis of the superior mesenteric artery. In 1895 J. W. Elliott¹² reported two cases: The first was operated on in July, 1894, and probably followed a reduced, strangulated, inguinal hernia. Four feet of small bowel was resected and not immediately anastomosed; after a long convalescence the patient recovered. The other patient died. He stated that cases of mesenteric thrombosis are not often seen even by the pathologist and have rarely been recognized during life. Also, that he had been unable to find even a suggestion that surgery might be useful in such cases; on the contrary, it is distinctly stated by certain authorities that such cases are beyond the help of surgery.

In 1897 Karcher¹³ reported a recovery from superior mesenteric artery thrombosis. In 1900 G. H. Edington¹⁴ reported the case of a man, aged 21, who six weeks previously had two attacks diagnosed appendicitis; 24 hours before operation he had sudden pain in the abdomen and collapsed. Two perforations were found in the appendix. The mesenteric veins were thrombosed. The appendix was removed by cutting through the mesentery. Patient died in 24 hours. In 1904 Elliott¹⁵ reported a case of mesenteric thrombosis with 14 inches of gan-

grenous bowel following an anterior gastrojejunostomy. Resection was done and the ends left outside the abdominal wound. Result (?). In the same year Jackson, Porter and Quinby¹⁶ wrote an excellent article on mesenteric embolism and thrombosis, reporting a study of 214 cases. A few cases postmortem showed a collateral circulation established through the superior hemorrhoidal vessels with the right and left colica. They mentioned that in 1897 Robson reported ligation of the superior mesenteric vein and a recovery, reported twenty-seven new cases and mentioned the appendix as the cause in cases by Dr. Porter (operation and death). Dr. M. H. Richardson (operation and death shortly after second operation); Dr. F. B. Harrington (appendectomy, death sixth day; autopsy showed mesenteric thrombosis of the jejunum); and Dr. Nichols (appendectomy, ten or twelve days later a second operation by Dr. Munroe, mesenteric thrombosis and death).

They discussed the etiology and pathology very fully. In the symptomatology they stated that diarrhea or obstipation may be present but only 40 per cent of cases showed bloody stools; that sugar is often found in the urine and chills are important as a symptom. They discussed the differential diagnosis from intussusception and volvulus and said the nearest diagnosis will often be intestinal obstruction. They gave the prognosis as very fatal, stating that out of 47 operations there were 4 recoveries. They thought resection with immediate anastomosis unwise and that to resect and leave the ends outside the wound, especially if there is peritonitis, was the best procedure.

In 1905 A. Polya¹⁷ reported and discussed five fatal cases. In 1906 Joseph Blake¹⁸ reported a typical case occurring five days after the original operation, with resection and death. In the discussion, Howard Lilienthal said he had seen several cases following appendectomy but without gangrene of the intestine and all were fatal. He recalled one case, under the care of Dr. Gerster, with a very large liver which, after a long illness, recovered without surgery. In 1907 L. J. Schredl¹⁹ reported a case of mesenteric thrombosis of the portal vein with abscess of the liver following a perforated appendix. The same year John Funke²⁰ reported a case of thrombosis of the superior mesenteric artery with hemorrhagic infarction and perforation of the ileum. In 1909 Wilms²¹ reported his first case of ligation of the ileocecal vein (Braun's operation) with recovery. He stated that the Wilms-Braun operation had been performed in fifteen cases with ten recoveries. He warned that failures are due to delay and that the ligation must be done in healthy tissue. The statement was made that even severe thrombophlebitis with a long and varied course may recover

without operation. In 1910 Codman²² reported a case in a man, aged 45 with the diagnosis of subacute pancreatitis, perforated ulcer or perinephritic abscess. Two coils of small intestine showed hemorrhagic gangrene. Considerable difficulty was experienced in tying off the mesentery, which was edematous and friable. A V-shaped section, with the apex below the large loops of blood vessels, was removed, an end to end anastomosis made and patient recovered. This was a primary operation and the primary cause not given.

He stated that it was the third case of mesenteric thrombosis with recovery at the Massachusetts General Hospital and that a careful search of the literature by Dr. Quinby in 1904 showed only three other successful cases. Also, a review of the articles in the Index Medicus since January 1, 1903, showed at least two more at that time, and that Haagn had given the most recent mortality statistics in an excellent article in the *Deutsche Zeitschrift für Chirurgie* for February 6, 1910, as follows: Arterial thrombosis, 125 cases, 26 operations, 2 recoveries. Venous thrombosis, 89 cases, 31 operations, 6 recoveries. The above case at the Massachusetts General Hospital made the ninth recovery.

In 1911 Wakefield²³ reported a case of gangrene of 30 inches of the ileum caused by thrombosis of the mesentery in which the loop of bowel and mesentery were resected, with end to end anastomosis with a Murphy button and recovery. No other lesion was found but the patient gave a history of chronic appendicitis for years. This also was a primary operation. In 1912 Green²⁴ reported a woman, aged 43, with symptoms of intestinal obstruction. Mesenteric thrombosis was found and 5½ feet resected with recovery. This was a primary operation, cause not mentioned. It is stated that Dr. W. S. Schley has seen a similar case of 22½ inches resected with recovery. In the same year Davis²⁵ reported a case of mesenteric thrombosis with resection, enterostomy, end to end anastomosis and recovery. Woman, aged 45. In 1913 Trotter²⁶ reviewed 366 cases and reported two cases, one of 7½ feet, the other 4½ feet, resected with recovery. Neither case followed appendicitis and both operations were primary for the condition found.

In 1913 Braun²⁷ reported that in 1907 he made an unsuccessful attempt to ligate the ileocecal vein but in 1913 reported two successful cases with recovery. The first patient was sick two months with chills, constipation, pain in right lower abdomen, fever and icterus. The family physician diagnosed the condition as septic thrombophlebitis and sent him to the clinic for an interval appendectomy. At operation the appendix was found inflamed with an abscess at its tip; appendix removed; then the anterior

leaf of the ascending mesocolon was opened and a double ligature applied to the ileocolic vein and a 2 cm. section of vein was removed; the patient recovered. It is possible, the author thought, that in this case appendectomy and opening the small abscess would have been sufficient, but in every case of appendicitis accompanied by symptoms of displacement of septic thrombi from the mesentery he recommended not only the appendectomy but also ligation of the ileocolic vein.

The second case was much more difficult and further advanced. The abscesses were drained, but the appendix could not be found and was not looked for or removed. The thrombosed ileocolic vein could be felt and the portion near the ileocecal angle was filled with suppurating thrombi. In the process of loosening up the vein a branch of the ileocecal artery was injured and ligated, but circulatory disturbance in the intestine was not noted. The wound was drained and left open. Examination of the thrombi (Prof. Risel) showed individual gram negative rods in the sections. Culture showed colon bacilli. After a very stormy convalescence the chills and jaundice disappeared and the patient recovered. The author felt that the patient would most surely have died without the operation.

In 1914 Petren²⁸ collected 220 cases. He quoted Fromme as stating that not more than six recoveries are on record from ligation of the ileocecal vein. He stated that Nothnagel reported a case of abscess of liver four years after an attack of appendicitis, and that Bruett suggests the prophylactic ligation of the ileocecal vein by the Wilms-Braun operation, especially if chills are present. Also, that all "rest" abscesses about the appendix should be drained.

In 1915 Darnall²⁹ in an excellent article reported two cases. He mentioned infection as an important cause, both ascending and descending; that the mortality is 94 per cent and the symptoms resemble intestinal obstruction or acute peritonitis. One of his cases followed a volvulus of the small intestine and the other an acute perforated appendix; two deaths. He stated the affected segment may be all or just a small portion of the intestine.

In 1916 Blackburn³⁰ reported 35 cases. He mentioned that L. B. C. Trotter* described one case with a gangrenous appendix with a thrombus of a vein in the abscess wall which he carefully dissected out and followed to the mesentery veins. Blackburn reported one case following an appendectomy one day before with death.

In 1918 Escudero³¹ reported that up to that time there had been some 300 cases reported, but rarely as a postoperative condition. He said it

is more frequent after hernia operations and reported three cases following appendicitis, the first 30 days after the second, 24 hours after appendectomy, exploration and destruction of colonic adhesions, and the third, 6 hours after operation during the attack. All were fatal. He discussed the pathology, differential diagnosis, symptoms and complications and stated that all cases of *postoperative* mesenteric occlusion which have been published have been fatal.

In 1921 R. G. Loop³² reported nine cases in which operation was done with one recovery (a primary operation following fibroids of the uterus). He said there were 500 cases on record. He gave an excellent picture of the condition: A woman, aged 41, abdominal pain, much tenderness but no distention or rigidity, uterine fibroids, free fluid in abdomen, 18 inches dark intestine, resection, anastomosis, recovery; fibroids later removed. He described the peritoneal fluid as transparent, amber or bloody, and odorless; the intestines cyanosed, plum color, soggy or edematous, free from adhesions, lumen relaxed, no tendency to crowd out the abdomen, heavy with a thick and doughy mesentery the mass of intestines dragging it down on the pelvic brim. There may be diarrhea, pass flatus or feces with no relief of pain, early vomiting (stercoraceous or bloody) with severe, colicky pain, often worse on left side. Shock present and essentially afebrile or subnormal temperature, little muscle spasm, muscle flaccidity, percussion note dull with no distention, and gave the mortality as 88 per cent.

In 1923 J. N. Jackson³³ recommended early diagnosis and operation. He said septic thrombophlebitis travels from the mesenteric colic veins to the portal and thence to the liver. He mentioned one cure of a liver abscess following mesenteric thrombosis.

In 1925 O. M. Chiari³⁴ wrote a very comprehensive article and described a characteristic case of his own with thrombophlebitis in the realm of the mesenteric veins at the angle of the cecum with emboli to the liver, and recovery. The abscess was drained by puncture. There were diarrhea and chills. He said the case proved that the prognosis is not necessarily bad. He described another case with embolic symptoms of the liver and kidney where the appendix was removed, the abscesses drained and after a long convalescence, recovery. The author felt that the Wilms-Braun operation is more useful as a prophylactic measure and agrees with Fromme in recommending exposure of the appendix and drainage of any abscesses in all cases which arouse suspicion of a thrombophlebitis of the roots of the portal vein.

In 1925 Fromme³⁵ reviewed the literature and reported the case of a girl, aged 12, successfully treated after a month's severe illness which was

*Cambridge University Press.

at first diagnosed as typhoid fever. In 1927 Melchior³⁶ reported a successful secondary ligation of the ileocecal vein following appendectomy in a doctor, aged 26. Melchior stated that up to that time all of these (Braun's) operations were primary ligatures, i. e., they were done simultaneously with removal of the appendix. The first and only case reported by Wilms was of this type with a second opening of the abdomen and severance of the mesenteric angle. This case was successful but it stands alone in the literature. He believes the surgeon should not hesitate to relaparotomize in an attempt to save a life. In 1928 H. Hoffmann³⁷ reported and discussed two fatal cases.

In 1929 Bernard³⁸ reported a case in a boy aged 9 that proved fatal four days after operation. In the same year J. Wulsten³⁹ reported a case with successful treatment of thrombosis of the superior mesenteric vein by resection of the *entire* (?) small bowel, with recovery. In that year also Lapointe⁴⁰ reported a case of hemorrhagic infarction of the ileum due to venous thrombosis following appendicitis in a girl of seventeen. The primary operation for appendicitis was done in July, 1926. Four months later she was suddenly seized with abdominal pain, vomiting, temperature 37.9° C., pulse 140, respiration 40, diagnosed acute intestinal obstruction. Operation showed hemorrhagic infarction of one meter of ileum just above the cecum. The mesentery of the infarcted segment was thick and infiltrated with blood, triangular in shape. Resection, and ends left open and fixed to upper end of wound and later anastomosed.

Lapointe is convinced that a great many infarctions with undefined origin are the result of a previous appendicitis. So long as the thrombosis remains monotruncular only the liver is endangered by centripetal migration of a clot but return circulation in the small bowel can still be accomplished; however what one finds at operation is a massive thrombosis of all efferent veins of the infarcted segment which may be some distance from the point of departure of the initial thrombosis. In discussing the advantages of enterostomy in cases of intestinal infarction he added "that of course it cannot be done when all of the small intestine is infarcted and there is nothing left but to close the abdomen without doing anything," and this is what happened in one of his two appendicitis cases.

In 1930 Ochsner, Gage and Garside⁴¹ stated that mesenteric thrombosis occurs in .1 to 1 per cent of cases of appendicitis and in 5 per cent of all (appendicitis) dying of peritonitis. The appendix doesn't have to be perforated. The route of travel is from appendix vein to ileocolic vein, superior mesenteric vein, portal and liver. They

stressed the seriousness of chills in appendicitis and mentioned fourteen or fifteen recoveries after portal or liver infarction. In the same year J. Jacobi⁴² reported two cases following enteritis, both fatal. In 1931 L. M. Larson⁴³ reviewed thirty-six cases. Five were due to appendicitis with five deaths. He said the symptoms are those of intestinal obstruction and laid stress upon the severity of the condition rather than upon the frequency and that it is 100 per cent fatal without surgery. In the same year Royster⁴⁴ mentioned Braun's operation and recommended, in appendectomy, removal of as much as possible of the meso-appendix as a prophylactic. In the same year Funicci⁴⁵ reported a case but I was unable to get an abstract of it.

In 1931 also Katrakis⁴⁶ discussed the surgical treatment of thrombophlebitis following appendicitis. He stated that Braun observed eight cases of thrombophlebitis out of 600 appendectomies, and that Brutt found fifteen cases of purulent thrombophlebitis of the portal vein among 2500 cases of acute appendicitis. He said the Wilm-Braun's operation had been performed in fifteen cases with recovery in ten. He felt that many failures are due to tardy operation and that the surgeon should risk an occasional unnecessary operation. He stated that generally patients suffering from severe thrombosis of the portal vein are looked upon as lost without operation. He had a case which showed that this is not always inevitable; a boy, fourteen, acute appendicitis, operation, later symptoms of portal thrombosis, liver abscess, long convalescence and recovery. In the same year Moncalvi⁴⁷ discussed the operative treatment of hepatic abscess from acute appendicitis followed by left peritonitis and left thrombophlebitis and reported a case. Result (?). In 1932 J. Minne⁴⁸ wrote an article on "Rare Complications of Gangrenous Appendicular Peritonitis," and mentioned one case with six operations recorded but no mention of thrombosis.

3400 Meramec Street.

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APPENDICITIS

A DEFINITE ETIOLOGY AND POSSIBLE COMMON CAUSE OF OTHER DISORDERS OF THE DIGESTIVE TRACT

L. A. MILLIKIN, M.D.

ST. LOUIS

Appendicitis has markedly increased in the last thirty years, as have several other alimentary conditions, such as gastric and duodenal ulcers, cholecystitis, pancreatitis and diabetes, thus suggesting a common cause.

In the United States during the last thirty years the percentage of deaths due to appendicitis has increased enormously in comparison with the percentage increase of population, as is shown by the following data:

Year	Number of Deaths From Appendicitis	Population of the U. S.
1900	2,987	76,142,210
1905	4,062	
1910	5,154	91,132,080
1915	8,397	
1920	11,702	105,710,620
1925	15,618	
1930	18,000	122,775,046

Thus, there were 3.8 deaths from appendicitis per 100,000 population in 1900, and 14.6 deaths from appendicitis per 100,000 population in 1930.

From the above it is obvious that appendicitis has rapidly increased. This conclusion is strengthened by the fact that earlier diagnosis, improved surgery and better postoperative treatment in the last decade have saved a large percentage that would not have lived in 1900. Something in our mode of living or habits must account for this increase.

One of the most radical changes in habits has been the increased consumption of large amounts of cold materials. We now have our enticing ice cubes in almost every refrigerator to make delicious cold drinks when at home, ice water in coils when at work, and beverage stands to supply cold materials *ad libitum*.

If we should compare the skin surface of the feet with the mucous membrane of the intestinal tract, no doubt most of us would feel that the skin on the feet has the greater resistance to cold. Few people would enjoy putting a foot

in ice cold water and keeping it there, but many think it perfectly proper to fill the stomach with ice cold foods and drinks. The discomforts caused by such abuse of the alimentary mucosa are often followed by various remedies, such as strong purges.

The majority of enteritis cases are due to an irritation caused by chemical or thermal substances. The principal chemical substances causing enteritis are large doses of various cathartics, alcohol and various food chemicals. The thermal substances consist mainly of ice water, cold beverages, ice cream, ices, iced salads, etc. The products of such irritants extend throughout the gastro-intestinal tract causing more or less gastro-enteritis and colitis. As the appendix is a part of the gastro-intestinal tract, the causes of appendicitis must nearly correspond to those causing gastro-enteritis.

The Italians in this district are extremely susceptible to appendicitis. Their food is even more rational than that of the average American, but they consume large quantities of ice cold water, beer and ice cream, and on Saturday or Sunday it is customary for them to take a couple of ounces of castor oil or a bottle of magnesia. In summer the ice water bellyache accompanied by diarrhea and vomiting is a common complaint.

In children especially, ice cream and cold drinks often produce an enteritis. This type of enteritis is extremely common in the summer months and is usually accompanied by cramps, vomiting or diarrhea. In general practice we have all seen much of this condition and have attributed it to fermenting foods or errors in diet. This is true to an extent, but a greater percentage of these intestinal irritations is caused by cold products and drastic purgatives.

As long as the human race persists in taking at one time, an ounce or two of epsom salts, a bottle of magnesia, a couple of ounces of castor oil; or persists in filling the stomach with ice cold water, ice cream and various other cold substances, these people will have congested gastro-intestinal mucous membranes accompanied by an increased peristalsis and followed by a period of constipation. As long as they have congested intestinal mucosae they will have appendicitis. This probably holds true for the gallbladder and pancreas since their ducts form mechanical connections with the intestinal tract similar to those of the appendix. It is quite possible for repeatedly inflamed mucosae to ulcerate; hence this may account for many stomach and duodenal ulcers. Since ulcers, cholecystitis, diabetes and appendicitis are increasing in a rather common ratio, it is logical to expect a common cause, viz., repeated gastro-enteritis.

After a few so-called "gas pains" or cramps, which in reality are hyperperistaltic pains due to

irritation and congestion, the intestine, due to its size, drains and a period of constipation follows due to over stimulation. The less fortunate appendix, however, may be required to retain irritative material for some time because of its small ostium which may be closed during the period of congestion. If this insult be repeated many times, some ulceration of the appendiceal mucosa occurs with resultant scar and constrictions which further retard drainage of the appendix. The mechanism involved here is similar to that of strictures of the urethra.

Repeated ulceration and lymphangitis, originating in the appendiceal mucosa and extending along the lymphatic vessels of the ascending colon, accounts for the many different angles that adhesions form about the appendix and cecum. These adhesions produce many of the varieties of appendicitis as to location.

Acute appendicitis is an extremely rare condition, although it is a common belief among physicians and laity that appendicitis is a condition that comes on like a cyclone. An acute exacerbation may be violent, but imagine an appendix as large as an adult finger bound by adhesions of almost fibrous structure being formed in twelve to forty-eight hours! It is safe to say that 90 per cent of the cases give from three months' to many years' warning in the form of indigestion and many types of abdominal distress.

DIAGNOSIS

The usual symptoms of the acute exacerbations are well known. The symptoms of the chronic form often present a baffling proposition because they may be almost identical with a number of abdominal conditions, differentiation of which must be individually worked out. However, it is simplified by remembering that the appendix is a part of the intestinal tract and anything that increases mobility is apt to increase the symptoms. Roentgenograms are almost useless. Occasionally, an appendix fills with barium, which proves it is patent at that time; but an appendix that would not occasionally fill and empty, would have to be badly obstructed. Therefore, the shadow would not show a retention by constriction unless the appendix at that time remained filled after the cecum had emptied.

The fluoroscope is the greatest aid at our disposal for diagnosing chronic appendicitis and adhesions of the ascending colon. Barium is given eighteen hours previous to the examination, and under the fluoroscope mobility of the ascending colon and cecum can be determined. A normal cecum and ascending colon should be mobile to within one inch of the midline, downward one inch, outward one inch, and upward two inches. Adhesions tend to immobilize these

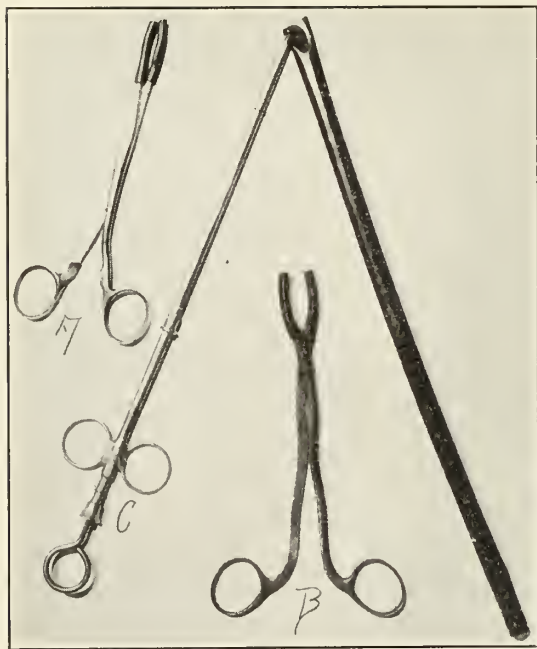


Fig. 1. A and B are types of forceps used to grasp and remove the appendix, tubes, etc. C is drain inserter with type of drain used.

structures, hence by this method definite localization of adhesions is not difficult. The appendix as a rule is not seen, but since the cecum is well outlined the exact location of the appendix is known. The fingers should be placed directly over it and a rolling pressure applied; this will cause some type of pain if the appendix is distended, adherent or inflamed. Often the patient complains of pain in the epigastrium, more often about the umbilicus and occasionally in the back. A patient with an active ulcer or inflammation in the appendix invariably feels worse the next day after the appendix has been manipulated. This would be expected just the same as mobility or irritation would increase the congestion and pain of any pathological tissue. When the appendix fills and fails to empty within seventy-two hours, the cecum having emptied, the interpretation should be a definite constriction. There are many cases that have not reached the stage where adhesions have formed; the appendix empties and has periods which are apparently normal. At present, there is no method of diagnosing some of those cases during their apparently normal intermissions.

TREATMENT

Preventive.—Cold materials should be eaten or drunk slowly enough to become nearly body temperature at time of entering the stomach.

Laxatives should be given in such small doses that they must be taken at least three times a day to produce the desired results.

Radical.—The average surgeon seems to have

little respect for the abdominal wall; apparently his main idea is to get a hole in the abdominal wall large enough to admit a hand and have plenty of room to see the pathological condition while it is still in the abdominal cavity. As a matter of fact, one sees very little when exploring but depends mostly on the sense of touch. One properly trained finger will reveal as much as the entire hand yet do far less damage to the abdominal wall and viscera.

Realizing that our foremost surgeons keep teaching us to make incisions larger and larger, one cannot help wondering how large the last incision will be. With this in view it has taken considerable courage to attempt surgery so radically different from what is taught today.

Incisions through the abdominal wall weaken the fascia and muscles, depending principally on the amount of fascia severed. The greater the raw edges the more chance for absorption and nonunion. If there is a fairly virulent infection at the time of drainage the skin, fat and fascia slough, producing a sick patient and a long convalescence. If nonunion is extensive a postoperative hernia results.

Adhesions after operations present some of the most distressing complications of abdominal surgery. This condition frequently is found prior to an operation and often not only remains but becomes aggravated after surgical procedure. Unnecessary handling of viscera and large incisions tend to make raw surfaces and encourage omental, visceral and parietal peritoneal adhesions. As a result a pitiful army of semi-invalids is requiring repeated and often unsatisfactory operations for postoperative her-



Fig. 2. Scar after appendectomy and bilateral salpingectomy.

nia, intestinal adhesions and many times for complete intestinal obstruction. This should induce some of us to wonder if an improvement in appendectomies is not in order.

Because of these fallacies, I have endeavored to develop a technic of small incisions, depending on the sense of touch of one finger for exploring, localizing and liberating pathological structures and bring them to the surface for repair instead of producing an opening large enough for the abdominal cavity to be used as a workshop.

APPENDECTOMY

A. Preparation of Patient.—Purgatives or anything that increases peristalsis should be avoided. As a rule purgatives aggravate the symptoms and may cause them to become really serious in a localized abscess or gangrenous appendix because the increased pressure and mobility of the cecum and appendix may be sufficient to produce rupture with expulsion of pus and fecal material into the abdominal cavity. Lubrication laxatives only, such as liquid petrolatum, are justifiable. They should be given twelve hours before operation on nonemergency cases and, if possible, two hours before operation on emergency cases as they are emollient and probably lessen postoperative gas formation. A soap suds enema and morphine are given one half to one hour before the operation in all cases.

B. Preparation of the Abdomen.—Irritating nonvolatile antiseptics, such as iodine and picric acid, should have been discarded long ago. Where these chemicals come in contact with peritoneal epithelium the tissue is destroyed leaving an area on which adhesions are very likely to form. After shaving and cleansing with soap, asepsis with alcohol has proved satisfactory. However, 1 per cent acriflavine is possibly safer; both have been used satisfactorily without noticeable difference in results.

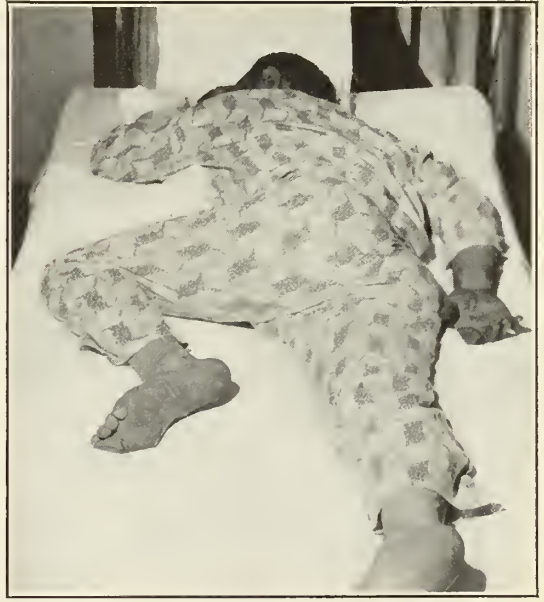


Fig. 4. A fairly comfortable position for abdominal drainage especially after appendectomy. Note that right arm and leg are straight and left hand at forehead, left knee flexed.

C. Technic of Operation.—A right rectus incision three fourths to one inch long, one inch below McBurney's point, is made through the skin and fat. The rectus sheath is grasped and pulled to the surface by forceps. An incision is made between the forceps. A forceps is then attached to each free edge of the fascia and used as retractors. The rectus muscle fibers are pushed toward the median line and a narrow retractor is inserted under the muscle, which is pulled upward and to the patient's left, exposing and lifting the peritoneum from the intestines. The peritoneum is grasped and pulled to the surface and an incision large enough to admit one finger is made between the forceps. A forceps is then attached to each edge of the severed peritoneum and used as retractors, the former retractors being removed. The index finger is inserted and the appendix located. I use a method by which the left first finger is inserted into the abdomen, pressed snugly to the peritoneum of the anterior abdominal wall. The finger is kept in contact with the peritoneum as it passes to the right, across the iliac fossa until it reaches the iliac artery (this procedure clears the path of the finger of small intestine), then up the outer border of the iliac artery until an obstruction is met, which is the mesentery. The finger comes in contact with the under surface of the adjacent ilium, then passes to the right, usually about one half to two inches, to the ileocecal angle. By slightly moving the finger around in this angle the cord-like appendix is felt.

If the appendix, cecum or ascending colon are

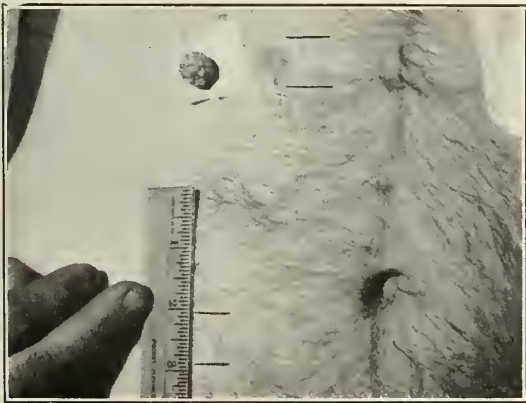


Fig. 3. Scars after appendectomy and cholecystectomy with removal of the single mulberry stone pictured.

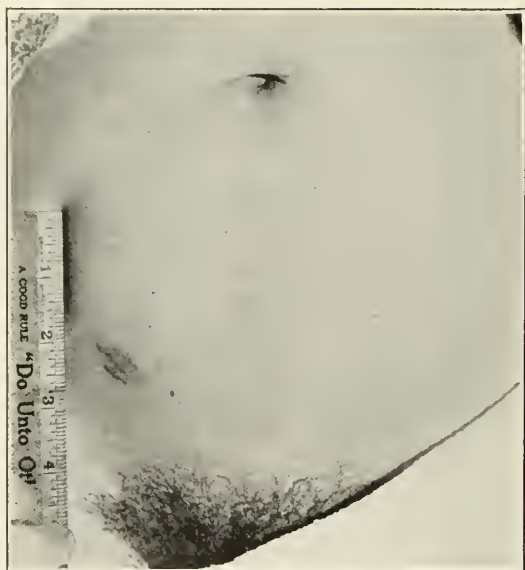


Fig. 5. Scar after appendectomy and right salpingectomy for ectopic pregnancy through the same incision (drainage).

not mobile, they are made at least partially so by dissection through cleavage lines with the finger. The finger holds the appendix partially immobilized and acts as a guide, while a forceps with protected ends (fig. 1) is inserted parallel with the finger to grasp the appendix loosely. The finger is withdrawn, followed by forceps and appendix, which is dissected free from any adhesions present. The appendix is then removed by the technic preferred. However, the appendiceal base should be inverted and the appendiceal mesentery stitched over the inverted area.

If there is reason to suspect a ruptured appendix or a walled-off abscess, the patient should be immediately put in Fowler's position, kept



Fig. 6. Right rectus (1) and suprapubic (2) scars after appendectomy for perforated appendix and abdominal pus.



Fig. 7. Right rectus (1) and suprapubic (2) scars after appendectomy for perforated appendix and abdominal pus. Hospitalization 6 days.

there throughout the operation and transferred in the same position to bed. The extreme toxemia often seen in these cases is due to the amount of absorption of toxic substances by the peritoneum because of the position and lack of sufficient drainage. In addition to inserting a drain through the McBurney incision, every pus case should have a suprapubic drain inserted to the posterior culdesac. A one half inch suprapubic stab wound is sufficiently large to allow the insertion of a small, soft rubber tube drain into the posterior culdesac, provided a drain inserter (fig. 1) is used. This suprapubic drain is extremely important because in a large percentage of cases the peritoneum will not wall off the infected area properly and, as pus gravitates downward during and after the operative procedure, no person is qualified to say there is no pus or will not be pus in the pelvis. For pus to travel upward from the culdesac to McBurney's area is expecting much of a drain, and since the suprapubic drain lessens the route by four to six inches it is only sound judgment to use it.

The cecum, lower ileum, ovaries, tubes and uterus can be explored by one finger before closing the incision. If an operative procedure on the tubes or ovaries is advisable another inci-

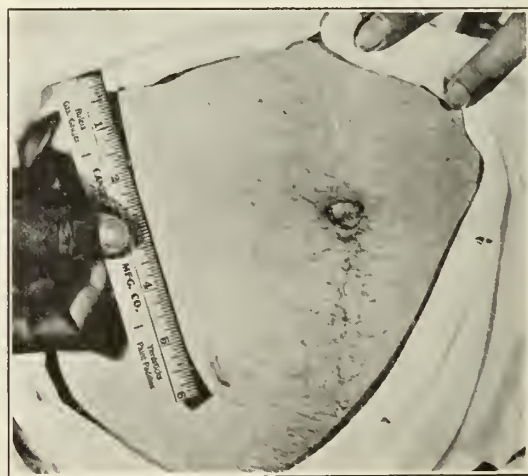


Fig. 8. Scar after a simple appendectomy.

sion may be made in the midline above the pubes and repairs made similar to the technic used for the appendectomy (fig. 2). After an appendectomy is completed and it is advisable to explore or operate on the gallbladder, a one inch subcostal, right rectus incision may be made. For the surgeons who are not so sure that cholecystectomy is the ideal operation but prefer cholecystotomy and drainage, it is fairly easy to bring the gallbladder fundus to the surface through a small opening, remove the stones and establish drainage (fig. 3).

POSTOPERATIVE TREATMENT

All cases should be in the Fowler position and given morphine for the first eighteen to twenty-four hours. The morphine not only relieves pain but diminishes peristalsis and in that way immobilizes the intestine. Immobilization is as important when treating an injured intestine as it is when treating an injured bone.

Drainage cases should immediately be placed in the Fowler position and lie on the right side and abdomen, and be kept there for from twelve to twenty-four hours, or until danger from absorption has passed. Ordinarily, this is an uncomfortable position. However, if the right arm is made straight and placed along the side, the left arm and hand resting on a pillow near the forehead, the right leg extended, the left thigh and knee flexed (fig. 4), the patient will be fairly comfortable. Water proctoclysis should be started immediately, 1000 to 3000 c.c. of glucose saline hypodermoclysis, and as soon as the nausea if present disappears warm water given orally relieves a great deal of the postoperative distress. The intake of cold materials should be strictly prohibited.

It is rarely necessary to give laxatives or enemas. Mineral oil is about the least irritating and probably will do less damage than the average of intestinal stimulants. Soap suds enemas are safer than laxatives because they stimulate only the descending colon. Some physicians give an ounce of magnesium sulphate or other purgative on the third postoperative day. After this mode of treatment trouble often begins, especially so if about the same treatment was instituted previous to the operation. Neither cold liquids nor cold food should be permitted as they increase peristalsis and hyperemia of the mucosa with subsequent gas pains. The more intestinal irritants, the more gastro-enteritis, the first symptoms of which are the so-called "gas pains" due to distention and over-active peristalsis.

One case was observed in which the lower end of the cecum was literally torn open from hyperperistalsis caused by one-half ounce of epsom salts and two drams of aromatic fluid extract of cascara given on the third postoperative day.

The mobility of the colon caused by a purgative is extreme compared to the mobility that walking even long distances will cause. For that reason there need be no hesitation in allowing patients to sit up or walk twenty-four hours after an appendectomy. This has been done repeatedly; in fact, they often leave the hospital in from forty-eight to seventy-two hours with no resulting trouble. Several have even done light work at the end of one week. Approximately 700 cases were operated on, including drainage cases. This series having accumulated over a period of seventeen years and mostly in private practice, has afforded an excellent opportunity to follow postoperative reactions. The results are: (1) Markedly lessened hospitalization; (2) no hernia; (3) postoperative adhesion symptoms markedly reduced; (4) mortality not over 1 per cent.

CONCLUSIONS

1. Appendicitis has increased enormously in the past twenty years along with the increased consumption of ice cold water and beverages.

2. Cold materials and irritative cathartics are responsible for a large percentage of intestinal inflammation. Since the appendix is a part of the gastro-intestinal tract it is logical to expect anything that will cause an inflammation of the gastro-intestinal canal will cause an inflamed appendix.

3. There is probably a common cause for the majority of cases of gastro-intestinal ulcers, cholangitis and cystitis, pancreatitis, diabetes and appendicitis, viz., chemical and thermal irritants.

4. Pericolonic adhesions and appendicitis can be diagnosed with the fluoroscope.

5. The appendix can be removed through a small opening.

6. The small incision lessens absorption of toxins, postoperative hernia, adhesions and hospital confinement.

7. The uterus, tubes, ovaries, lower half of the right ureter, right kidney, ascending colon and lower ileum may be explored through the opening for an appendectomy here described.

4928 Shaw Avenue.

Excluding the possibilities of dangerous complications, sinusitis in itself is a painful disease from which the patient suffers severe headache and pain in the face in addition to the usual symptoms of a bad head cold. It is a disease well worth preventing by avoiding head colds, by using a mixed diet with plenty of milk, cream, butter, raw fruits and vegetables, by adding cod liver oil to the winter diet, by obtaining plenty of fresh air and sunshine and by forming good health habits in general. If sinusitis does occur, it is most wise to place oneself in the hands of a capable physician to avoid serious complications, Louis Kleinfeld suggests in the March *Hygeia*.

THE MANIC PHASE OF MANIC DEPRESSIVE PSYCHOSIS AND ITS TREATMENT

LOUIS H. KOHLER, M.D.

ST. LOUIS

Mania is a form of insanity characterized in its full development by mental exaltation and bodily excitement.¹ There is no special etiology for mania. It may be said, however, that mania is ordinarily a disorder arising between the twelfth and twenty-fifth years, the first attack in two thirds of cases occurring before twenty-five; that it is more common in females than in males; that plethoric individuals are most liable to be affected. In the City Sanitarium approximately 11 per cent of the patients are classified under the diagnosis of manic depressive psychosis. Hereditary taint is found in the majority and degenerative stigmata in about one fifth of the cases. An attack of mania is usually preceded by a period of depression lasting from a few days to a few weeks, sometimes for several months.

When the true outbreak of mania begins to manifest itself the sorrowful mood begins to give way to an exalted condition which the patient looks upon as a state of renewed health and well-being. He takes a renewed interest in everything and becomes unusually cheerful and talkative. In mild cases the patient begins to surprise intimates by his talkativeness, sportive remarks, merriment and rather immoderate actions and undertakings. There is considerable mobility of the emotions so that the elation may readily pass into a condition of anger or tears over trifles. In the more severe types all these symptoms are aggravated. A veritable chaos of ideas throngs his mind and the effect upon movement of this crowding series of ideas amounts to a constant motor agitation.

The patient laughs, sings, shouts, makes grimaces, dances, runs about, becomes destructive and filthy, all inhibitory idea associations ceasing to have any influence over the rioting torrent of thought. The patient with mania is fundamentally optimistic and egotistic. Everything about him is rose-colored. He feels rejuvenated; rejoices in his health, strength and vitality. The accelerated flow of ideas in mania is naturally most conspicuous in the speech of the patient, which varies from babbling to logorrhea. In the milder degree of talkativeness we are able to follow the sequence of associations. The sentences are often bound together by the ordinary relationship and connections of ideas, but among them many latent ideas spring into consciousness and expression; again, the sound

of spoken words suggest others of similar sound giving rise to rimes and assonances. In the more striking grades the logorrhea is so pronounced that it is impossible to find clues to any association, whether of sound or idea. It becomes a chaos of words, consequent upon an actual dissociation of the ideas in the rushing stream of thought—a secondary incoherence. The entire loss of inhibitory control of ideas is especially shown in the absolute lack of modesty, in the tendency to the employment of vulgar and obscene words and expressions. This profanity and obscenity becomes all the more astonishing by contrast when it is observed, as it often is, in the most refined and cultured of women.

The attention of the patient with mania is extraordinarily increased so that the most insignificant trifle in his environment does not escape him. But this very increase of the power of attention, combined as it is with an unpausing stream of ideas, entails an absolute lack of concentration. His attention cannot be held a moment and yet his memory seems preternaturally intense so that after recovery he may remember all the details of his maniacal activity with great distinctness, and in the midst of the chaotic turmoil of his mind often recognizes, as if he stood apart from and judged himself, the very madness of his fancies and acts. The judgment-associations are, in fact, normal. The sexual instinct is morbidly exalted, giving rise in both sexes to immodesty and obscenity of speech and manner, and often to sexual excesses and masturbation.

The actions of patients with mania correspond in character to the degree of acceleration in the stream of ideas. When this is very great, turbulence, violence and destructiveness are common, not with homicidal or suicidal intent, because they are incapable of acts requiring any particular concentration of mind or reflection, but simply as the result of uncontrollable automatic impulses. Sleeplessness is characteristic of this condition. General sensibility seems benumbed, probably because of the lack of concentration of thought.

The situation confronting us in the maniacal case is for practical purposes that of a superabundance of energy which demands outlet. It is as if the patient were a prodigal possessed of a single overmastering impulse to dissipate the fortune of his strength, regardless of consequences to himself or others, and without the check of either fatigue or pain.

Obviously these cases are institutional and in the Sanitarium we employ two measures to meet this situation. One is hydrotherapy, which renders the excess of psychomotor activity innocuous not only to the environment but especially to the patient himself and provides a sedative medium in which it must expend itself.

Read before the St. Louis Neuropsychiatric Society, Nov. 28, 1932.

1. Tuke's Dictionary of Psychological Medicine.

The ideal hydrotherapeutic procedure that has been found of value in acute mania is the wet sheet pack. The rationale of the wet sheet pack is definitely established and needs no further discussion at this time. Certain cases present themselves in which the wet sheet pack is contraindicated. For example, (1) patients who do not show the proper physiological reaction to this type of treatment; (2) patients who develop a dermatitis after prolonged contact with the wet sheets; (3) patients who already have a dermatitis that may be aggravated by moist applications, and (4) patients with a deformity or fracture of one or more extremities. In these cases we are using sodium iso-amylethyl barbiturate.

Bleckwenn,² of the University of Wisconsin, in several interesting articles, has reported on the use of sodium iso-amylethyl barbiturate in neuropsychiatric cases. In the Sanitarium we have administered over seven hundred fifty intravenous injections to some sixty patients in the last eighteen months.

When the intravenous injections of sodium iso-amylethyl barbiturate were first started we used a 10 per cent solution of the drug. But too frequently we observed a pronounced cyanosis, rapid fall of blood pressure and marked respiratory depression, necessitating the immediate discontinuance of the drug. This experience caused us to modify our technic and now our method of administration is essentially that outlined by Bleckwenn.³ A 5 per cent solution of the drug is prepared by dissolving one gram (about fifteen and a half grains) in 20 c.c. of distilled water. Thus each c.c. contains three quarters grain. The solution is injected intravenously at the rate of 1 c.c. per minute, and this rate of injection should be accurately controlled by a watch.

The minimum dose in our series has been 10 c.c. or seven and a half grains; the majority of the patients received fifteen grains. The injections were discontinued when a rapid fall in blood pressure was noted. The patient must be closely watched by an attendant until the initial narcosis wears off.

The patient became drowsy after the injection of 5 c.c. of the drug and was in profound sleep after seven and a half to ten grains had been given. At this time the deep and superficial reflexes disappeared and the corneal reflex was abolished. The systolic pressure dropped from twenty-four to seventy-two mms. and the diastolic pressure from six to thirty mms., and in one case to forty mms.

Sleep lasted for from two and a half to six and a half hours. Drowsiness persisted on return to consciousness, and in most cases after taking nourishment the patient returned to physiologic sleep lasting several hours.

It is our opinion that of all the numerous drugs we have employed in an attempt to produce periodic sleep in patients with acute mania, none have given the encouraging results we have found in the intravenous use of sodium iso-amylethyl barbiturate.

5400 Arsenal Street.

BRIEF HISTORY OF LITHOTOMY

ARTHUR L. OSBORN, M.D.

KANSAS CITY, MO.

Stone in the urinary bladder is a condition so distressing, so lingering and so often fatal that it early attracted the attention of surgeons. In the early days the diagnosis was made by bimanual examination and a little later by the sound.

The earliest records of lithotomy show that it was performed without the aid of the sound as early as 1500 B. C. by the Hindus. The Egyptians believed more or less in allowing "nature to take its course" and their efforts lay mainly in dilating the urinary passages. Some success was reported in removing small vesical calculi by ballooning the urethra with air.

In 400 B. C. Hippocrates recognized vesical stones and expounded the theory that the cause lay in a thick, earthy phlegm which is collected in the bladder. He thought by reason of a weakness of expulsive power or a defect in the passages it was retained, hardened and converted by the body heat into a stone. This was generally accepted until well into the sixteenth century.

The earliest description of lithotomy comes from Celsus, a nobleman living at the time of Christ. His description follows: "Neither is it to be tried at all seasons, nor in every age, nor in every case, but in the spring alone, and only between the ages of nine and fourteen and also, when the case is so urgent, that it can be neither overcome by medicine, nor put off and that the patient must die if the operation is delayed." His preoperative care consisted in a moderate diet and nothing but water to drink for several days and no food at all was allowed on the day before the operation. During this period the patient was to take long walks with the idea of causing the stone to come to lie in the neck of the bladder.

The operation itself was to be done in a warm room and as follows: "A strong and intelligent person is seated on a high stool, lays

2. Bleckwenn, W. J.: Production of Sleep and Rest in Psychotic Cases, *Arch. Neurol. & Psychiat.* **24**:365, 1930.

Bleckwenn, W. J.: Sodium Amytal in Certain Nervous and Mental Conditions, *Wisconsin M. J.* **29**:693, 1930.

3. Bleckwenn, W. J.: Narcosis as Therapy in Neuropsychiatric Conditions, *J. A. M. A.* **95**:1168, 1930.

hold of the patient in a supine position, with his back towards him, and his hips being placed on his knees, with his legs drawn backwards; he orders the patient to lay hold of his own hams and draw them to the body with all his power, in which position the assistant secures them. The physician then cuts his nails and introduces his middle and index finger of his left hand into the anus, and places the fingers of his right hand lightly on the abdomen, in order not to injure the bladder if the stone be rough."

In female patients, the index and middle fingers of the left hand were inserted into the vagina instead of the anus. When the location of the stone was determined it was drawn downward into the neck of the bladder, the fingers of the left hand furnishing the guiding force. When a fixed position was reached a V shaped incision was made through the skin near the anus extending to the neck of the bladder with the tips of the incision directed a bit toward the ischia. With this done, a second incision was made transversely in the deep part of the wound in order to open the neck of the bladder. A hook or sometimes the index finger of the right hand was used to expel the stone.

Postoperative care was meager. A solution of vinegar and salt was used to stop hemorrhage and combat inflammation. The patient was placed on his back with his head lowered and in a few hours was given a warm bath, anointed with oil and cloths soaked in oil were placed on the wound. Ability to sleep, moist tongue, regular breathing, moderate thirst and pain were looked upon as favorable prognostic signs.

After a great number of changes, the incision came to be unilateral and crescentic instead of the usual transverse and lunate. Bell states however that these changes were for no particular good and served no other purpose than to make the operation more formidable and impressive, keep the patient ill and under treatment longer, and make his bill larger. Other surgeons of the day stated that the changes were justified and that the accidents with the old method, such as cut vessels, divided seminal vesicles and vesicorectal fistulae, were much too common.

For many centuries afterward lithotomy was performed almost exclusively by itinerant lithotomists, most of whom claimed secret powers and methods. These men traveled from place to place and operated chiefly by the method of Celsus. The most famous of these was Le Raoues of Chartres who traveled all through France and achieved great success by his dexterity. Moreover, he disregarded the season and age of the patient, which was a radical departure from the teachings of Celsus. But Collott, the lithotomist to the French king, berated him and asserted that Le Raoues "cut patients

that did not have a stone, that his incisions never reached the bladder, cutting only superficial parts; hence the rapid healing of the wound and the fact that no dribbling of urine followed."

In the early part of the sixteenth century an Italian, Franciscus de Romanis, brought forth a new operation for lithotomy which was held in favor for over 200 years. He noticed the ease with which some rather large stones were sometimes passed by women, either spontaneously or by use of extraction methods. This caused him to believe that if an opening were made in the urethra of a man near the bladder so as to leave the proximal end about the same length as that in women then it might easily be dilated and the stone removed. In carrying out this procedure, an incision paralleling the urethra was made in the perineum extending from the scrotum towards the anus. This took the place of the vagina in the male patient. The urethra was then opened near the bladder and that part between the opening and the bladder was dilated to considerable size allowing the stone to be extracted.

In most of the hospitals during the seventeenth and eighteenth centuries, tables were used with a seat which could be raised or lowered to support the patient's back. The thighs were bent in such a way that the heels touched the buttocks, the knees stretched apart, the hands were held fast near the ankles and tied securely thereto so that moving about was out of the question. With three or four assistants holding the patient the operator then set to work.

The postoperative results of perineal lithotomy done by Jacques, a French monk, were not so good, for one historian states that of sixty patients operated in the spring of 1700, twenty-four of them died, twenty-three were left with urinary fistulae and thirteen were cured. Dionis in his surgery states that over half of Jacques' patients who were pronounced cured subsequently died because of supervening symptoms. These sorry results however were in part due to the absence of postoperative care, for Jacques' idea, in his own words, was, "It is sufficient that I have extracted the stone; God Himself will cure the wound."

In 1560 Franco is supposed to have performed the first "high operation" or suprapubic approach for removal of vesical calculus. His first operation was performed upon a two-year-old child from whom the stone because of its size could not be removed through the perineum. Apparently, this method was lost sight of until many years later when Cheselden revived it in England early in the eighteenth century. The suprapubic approach was the direct result of two observations; namely, (1) that bladder wounds were not always fatal, and (2) that the bladder might be opened without at the same time opening the belly cavity. Cheselden de-

scribes his suprapubic operation as follows: "The patient was placed on his back on a table with head lower than pelvis. By means of a catheter the presence of a stone was first determined, then the bladder was distended with water and a ligature tied around the penis. An incision was made in the midline through the skin, fat and muscles, until the bladder was exposed. Next, a small incision was made at a convenient place in the bladder and the forefinger was inserted to locate the stone; this being done quickly before very much water escaped. When the stone was located, the forefinger was used to guide forceps or plecters into the opening to grasp the stone. If the incision was not large enough to allow passage of the stone it was lengthened by the use of the scalpel."

Cheselden perfected the lateral operation adopted in England a few decades before the American Revolution. According to his statistics it reduced the mortality rate to less than four per cent. In the lateral approach the patient was placed in the lithotomy position, a metal catheter was passed into the bladder and pushed out the side of the bladder in the left part of the perineum. An incision was then made with a long knife, beginning near the anus, upwards about two fingers breadth to the left of the raphe, passing obliquely to about the middle of the perineum cutting through the neck of the bladder and part of the bladder itself. In this way the urethra was not damaged. The finger was then passed into the bladder and the stone located, a pair of forceps introduced and the stone withdrawn.

In 1743, Foubert described a procedure by which he thought the fundus of the bladder could be reached without incising the neck of the bladder or the urethra. In order to induce a gradual increase of the bladder capacity he ordered his patients to ingest copiously an emollient decoction and afterwards to retain the urine as long as possible, all this being done for some days prior to operation. On the morning of the operation the patient was to drink more freely of the fluid. When the bladder was sufficiently distended a ligature was tied around the root of the penis, the patient was put up in the lithotomy position and an assistant pushed down upon the bladder suprapubically with the idea of forcing the organ down into the perineum thereby affording a larger surface to the surgeon. The index finger of the left hand was then introduced into the rectum, the gut pushed to the right while a grooved trocar five inches in length was thrust into the perineum about an inch above the anus. When the urine flowed, a long bladed knife was pushed along the groove and the bladder opened. This method proved unsatisfactory because the patients could not sufficiently

distend the bladder by drinking of the decoction and there was too much danger of cutting down along the side of the bladder and not into it.

Heister in 1759 made the observation that the lateral operation was not practicable in adult females because of the great danger of wounding the vagina. He further observed that any one method was not to be relied upon alone but that all of them had their advantages according to the different types of cases. Furthermore, he maintained that a good surgeon should be well acquainted with the manner of performing all the methods.

Le Cat of France (1700-1768) performed the operation of lithotomy as follows, and with great success: The patient was placed in the ordinary lithotomy position and a grooved staff of the English pattern was introduced into the bladder. After its introduction it was inclined to the right and brought as far as possible toward the perineum. The scrotum being raised by an assistant, the operator grasped the handle of the staff and having exactly determined its situation and direction in the perineum, the skin and fat were divided with the grooved knife as in the operation of lateral lithotomy by a long incision beginning at the membranous urethra, under the pubis and extending obliquely toward the anus. The operator next felt with the finger the position of the staff under the pubis and inserted the point of the knife into the membranous urethra and into the grooved staff. The knife was carried by a single stroke nearly to the prostate. In order to incise the prostate with ease it was necessary to carry the staff farther backward and inward to obtain the gland, when division of the urethra was made in a downward direction by the same knife. After sufficient dilatation, the knife and staff were elevated and a conductor introduced into the bladder along the groove of the staff.

Records show that these early lithotomists were by no means slow in their operative methods. Cheselden had the reputation of having extracted a stone in twenty-four seconds and of very rarely occupying more than sixty seconds in removing single calculus from the bladder. Lister states that Jacques in his heyday once did nine lithotomies by the lateral method in forty-five minutes, averaging five minutes per patient. Bertrandi tells of an interesting visit he paid Mr. Sharp at London. One day when the latter was about to perform a lithotomy he asked Bertrandi how long it took the Paris surgeons to perform the operation. To the reply that they could and did carry it out in from five to eight minutes, Mr. Sharp took out his watch and did the job in one minute. For a century Cheselden's technic was held in favor by lithotomists the world over, even the suprapubic operation being rarely used.

In 1842 Sir William Ferguson brought out a mediolateral operation and in 1848 Buchanan of Glasgow introduced a mesial lithotomy which was later modified by Allerton. This consisted essentially of dilatation rather than incision, the neck of the bladder and the prostate not being cut but dilated.

In 1860 or thereabouts, Thompson and Hutchinson gave up the use of the lateral method and began advocating the use of the suprapubic approach and since that time it has been generally accepted as the method of choice. You are all acquainted with its technic and modifications.

600 Professional Building.

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REGIONAL ILEITIS: PATHOLOGIC AND CLINICAL ENTITY

Burrill B. Crohn, Leon Ginzburg and Gordon D. Oppenheimer, New York (*Journal A. M. A.*, Oct. 15, 1932), describe, in its pathologic and clinical details, a disease of the terminal ileum, affecting mainly young adults, characterized by a subacute or chronic necrotizing and cicatrizing inflammation. The ulceration of the mucosa is accompanied by a disproportionate connective tissue reaction of the remaining walls of the involved intestine, a process which frequently leads to stenosis of the lumen of the intestine, associated with the formation of multiple fistulas. The disease is clinically featured by symptoms that resemble those of ulcerative colitis, namely, fever diarrhea and emaciation, leading eventually to an obstruction of the small intestine; the constant occurrence of a mass in the right iliac fossa usually requires surgical intervention (resection). The terminal ileum is alone involved. The process begins abruptly at and involves the ileocecal valve in its maximal intestine, tapering off gradually as it ascends the ileum orally for from 8 to 12 inches (20 to 30 cm.). The familiar fistulas lead usually to segments of the colon, forming small tracts communicating with the lumen of the large intestine; occasionally the abdominal wall, anteriorly, is the site of one or more of these fistulous tracts. The etiology of the process is unknown; it belongs in none of the categories of recognized granulomatous or accepted inflammatory groups. The course is relatively benign, all the patients who survive operation being alive and well.

MENTAL HEALTH OF PARENTS

WILLIAM C. MENNINGER, M.D.

TOPEKA, KANSAS

The problem of presenting the subject of mental hygiene before any group of parents presents many difficulties for three chief reasons: (1) There is always a difficulty in getting the parents to see the practical facts regarding their children's behavior or misbehavior because they usually seek advice chiefly to corroborate some cherished point of view of their own in the explanation of this behavior; (2) they are inclined to excuse their attitude of rebellion of acceptance of facts by the rationalization of parental love; (3) they cannot accept the facts that the ability to understand a child is not a natural accompaniment of the maternal instinct and consequently does not accompany the mother's ability to nurse the child.

In addition to these three difficulties encountered there is in a few instances still another difficulty to be met in those mothers who feel that by reading the latest books on psychology they will learn how to solve the behavior difficulties in their own child. For the most part they are inclined to be blind to the fact that the difficulty in the behavior of their child lies primarily in the parents' own difficulties which are only mirrored in the child.

Because it is a fact that bad behavior in most children as well as good behavior is the direct result of parental influence it is of chief concern to those of us who are parents and those of us who are not parents, to investigate our own difficulties and the pitfalls these are likely to strike.

Most people regard themselves as quite normal individuals. They are always able to see difficulties their friends may have, the eccentricities, the peculiarities, and yet remain naively blind to their own. The reason for this may in part be because of the difficulty in crystallizing a definite conception of what mental health is. There are several reasons for this difficulty; the first is the old bugaboo of attempting to separate the mind from the body as if they were two separate and distinct functioning units. We have learned long ago that this is impossible and that the concept of the personality must include not only the brain but the endocrine glands, the liver, the heart, the muscles, all of which function as one unit, very greatly interdependent upon each other, and the individual as we see him is the result of all these factors working together.

The second stumblingblock is the inability for most people to grasp any objective viewpoint of themselves. Always we can see the difficulties

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of others and like the old Quaker we feel that everyone is a little queer "except thee and me and sometimes thee is a little queer." Only as we may be able to step aside and see ourselves pass in review may we grasp some objective viewpoint of ourselves. Even then it is difficult and very often is carried to the extreme so that the individual becomes introspective, hypercritical of himself and is just as erroneous in his conclusions as the individual who never critically inspects the motives of his behavior.

A third difficulty in crystallizing our conception of mental health arises because of ignorance, because of the many misconceptions about mental health, the most common of which is failure to recognize that all of us have varying degrees of psychological ill health as we do of stomach ill health, or respiratory ill health, such as colds or other slight though not necessarily devastating sicknesses.

The widespread ignorance and misinformation regarding mental health account in part for its present underevaluation as an important factor in community life. It is not generally known, for instance, that there are more hospital beds for the mentally ill than there are all other types of hospital beds combined and that there are nearly twice as many people per hundred thousand population in mental hospitals as there are in all other hospitals combined. Furthermore in Kansas in 1930 there were more deaths by suicide (usually an evidence of mental sickness) than there were from the five most common communicable diseases; namely, diphtheria, typhoid fever, whooping cough, scarlet fever and measles. Our visiting teachers very admirably pay meticulous attention to the teeth, tonsils, weight and the like in school children and yet practically no attention is paid to the intellectual or emotional make-up of these same students. Large industrial corporations invest tremendous amounts of money in general hospitals and surgical service and yet very few of these same corporations give any consideration to the mental health of these same employees.

Mental hygiene which simply is the prevention of mental ill health is a partial solution for our present widespread problem of community unrest, depression, unhappy homes, misbehaving children and personal psychological distress. Mental hygiene recognizes simply the existence of mental ill health as well as mental health and very often the failure to have mental health, just as of physical health, is a matter of ignorance. In general, people understand physical hygiene and they can make simple rules to govern their eating, sleeping, exercise and the like; and yet these same intelligent people have little or nothing to guide them in the preservation of their mental health. The fact that we can construct rules to govern mental health does not neces-

sarily insure it since most of us know that we should have eight hours of sleep and most of us get along with much less than this.

Nevertheless, there are some simple precepts of mental hygiene which we can draw from an analogy with physical hygiene. (1) Doctors and friends often recommend a change of climate for a heart or lung disorder. Our mental hygienists should recognize the desirability of making a change of climate for the emotions, perhaps a change from the home or from work or from associates. (2) We hear much of brushing our teeth, and yet for better mental hygiene we would recommend the brushing of our mental teeth, by study and by reading. (3) Cleanliness is stressed in physical hygiene and should be stressed in mental hygiene by giving our minds a bath with recreation and the elimination of unpropitious thought and action patterns. (4) We are taught the value of a laxative. It is often true in our mental life that our memories need a cathartic to help them evaluate this personality environmental struggle as an aid to changing those factors in our environment or in ourselves which contribute to our unhappiness. (5) We recognize exercise as an important factor in maintaining physical health. The same is true of mental health; our energies should be exercised in a satisfactory, happy, constructive fashion. This sometimes can best be accomplished by the development of a hobby. It is well recognized that comparatively few of the people who suffer severe breakdowns have ever developed a hobby.

Again, it should be mentioned, reciting a list of mental health rules is no more mental hygiene than reciting a set of physical health rules is physical hygiene. In either case the practice of those rules is the prophylactic factor in the life of the individual. Most of us cannot be dependent upon doctors and certainly very few of us have mental health specialists to help us solve the problems of our children's and our own lives. These must be solved by an intelligent survey, a careful study of our findings and an honest application of the facts that we may be able to learn.

3617 W. 6th Ave.

"Case number 10,000. I note the number with care, for this is our ten thousandth new case since the first of January! No, I am not the warden of Sing Sing. I am the office secretary of the Oxford Visiting Nurse Association. My job is to keep the records of the people cared for by our staff nurses. I am not a nurse, and I never visit patients' homes. A stupid enough job, you say? Just a minute, while I finish the notations on case number 10,000." So writes Ann Scott in the March issue of *Hygeia*. With forceful clarity she describes a case cared for by the Oxford Nurse Association, that of a little girl, seriously afflicted with poliomyelitis. By this one case she proves how invaluable this service is to her town.

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MAY, 1933

EDITORIALS

THE KANSAS CITY SESSION

The 76th Annual Meeting of the Missouri State Medical Association will convene May 1 to 4 in Kansas City with all sessions and headquarters at the President Hotel. The Jackson County Medical Society and special committees have been diligent in perfecting arrangements for the session and the President Hotel is well adapted for the meeting.

An unusually interesting program has been arranged, including individual contributions dealing with many phases of medicine and surgery and symposia concentrating thought upon special fields which are of wide interest. The program is given on page 220 in this issue.

Four guest speakers will deliver addresses at the session. Each one is well versed in his specialty and a recognized authority. The speakers are Dr. Charles A. Elliott, Chicago, professor of medicine, Northwestern University Medical School; Dr. Peter C. Kronfeld, Chicago, associate professor of ophthalmology, Graduate School of Medicine of the Division of the Biological Sciences, University of Chicago; Dr. J. Gordon Wilson, Chicago, professor of otology and laryngology, Northwestern University Medical School, and Dr. Arnold S. Jackson, Madison, Wisconsin, of the Jackson Clinic and attending surgeon at the Methodist Hospital. Drs. Jackson and Elliott will deliver addresses in the scientific sessions of the regular program and Dr. Jackson has generously accepted the additional responsibility of addressing the open meeting on Tuesday night. Drs. Wilson and Kronfeld will speak at the session on Diseases of the Eye, Ear, Nose and Throat and conduct clinics at the General Hospital.

The special program on Tuberculosis promises unusually important contributions on the diversified features of that puzzling affliction.

The general program will follow the schedule of former years, the House of Delegates meeting on Monday morning and late Wednesday afternoon and the Council on Monday afternoon and Wednesday afternoon. Scientific sessions will be held on Tuesday, Wednesday and Thursday.

The dinner meeting of the Missouri Society of Medical Secretaries will be omitted as such and will be combined with a testimonial dinner for Dr. A. R. McComas, Chairman of the Council, which will be tendered him by his friends in appreciation of his service to the medical profession and the Association. This dinner will be held on Tuesday evening. A meeting, open to the public, will be held Tuesday evening following the dinner.

On Wednesday evening members of the Jackson County Medical Society will be hosts to visiting members of the Association at a smoker and get-together meeting.

Golf courses will be open to members of the Association.

STATUS OF BILLS IN THE LEGISLATURE

While the legislature is still in session as we go to press we can announce the disposition of some of the bills that we supported or opposed.

The principal measure that we supported was H. B. No. 282, a lien law for physicians and hospitals. The bill passed the House with a good majority but struck an unanticipated snag in the Senate. The opposition, it is said, emanated from insurance companies and a certain class of attorneys. The opponents would not or could not specify in what respect the bill was objectionable to them but their protests before the committee seemed potent enough to prevent it from being reported out. The bill died in the committee but we are encouraged to believe that it can be introduced in 1935 with better prospects of passage.

Toward the close of the session an important measure was passed removing all restrictions on the prescribing of alcoholic liquors by licensed physicians. This is H. B. No. 664 making it lawful for any reputable physician to prescribe alcoholic liquor in such quantities and with such frequency and dosage as in his judgment the needs of his patient may require.

When it became apparent that the repeal of the dry law could not be accomplished H. B. No. 664 was hastily drawn up and pushed through to passage in order that Missouri might be able to meet the Federal law recently adopted removing all restrictions on liquor prescribing by physicians. The Federal law was sponsored and its passage approved by the

American Medical Association. Certain persons have expressed a fear that such unrestricted privilege would induce physicians to write innumerable and illegal prescriptions for whiskey and other alcoholic liquors. Concerning this phase of the bill the *Journal of the American Medical Association* says editorially: "The adoption of this new law places on physicians a greater responsibility than has been theirs heretofore. The *Journal* has maintained that the honor of the profession warrants the granting of such a responsibility. The physicians of this country must demonstrate that this confidence has not been misplaced. The fact that the prescription of alcoholic liquors is still not permitted in several states, the fact that numerous physicians in states in which prescribing is permitted have refused to take out the necessary license or to avail themselves of the privilege, the fact that many physicians find the possession of this privilege a serious annoyance in their relationships to both patients and friends, are indications that the right to prescribe alcohol has never been an unmixed blessing. We believe that the physicians of this country can so administer the new situation in which they find themselves as to continue to merit the high honor in which both the public and the Government have held them." These restrictions cannot become effective until January, 1934, and therefore the Missouri statute on the same subject will also remain inoperative until that time.

H. B. No. 11 passed both houses and has been signed by Governor Park. This is the bill that abolishes the office of secretary of the board of health and creates the office of the commissioner of health who will also act as secretary of the board of health but not be a member of the board. At this writing the Governor has not announced his choice of health commissioner. The statutes concerning the board of health remain unchanged with the exception of the state health commissioner and the secretary of the board.

H. B. No. 174 which would limit the employment of public health nurses by county courts to a per diem basis died in the committee, as did also H. B. No. 175 concerning the employment of county deputy state commissioners of health.

COST OF VENEREAL DISEASE TO ST. LOUIS

The cost of venereal disease to St. Louis City and County was recently estimated by the Missouri Social Hygiene Association. Practically every phase of this cost was investigated with the exception of the cost to industry in the loss of time and lessened efficiency of workers. Because this is a time of more or less chronic un-

employment it was thought this figure would necessarily be inaccurate.

The total annual cost of venereal disease to St. Louis and St. Louis County was estimated as between \$2,071,000 and \$2,560,000. These figures were derived from the exact cost of treating syphilis and gonorrhea, locomotor ataxia and general paralysis of the insane for which syphilis is believed to be almost wholly responsible, and a per cent of the cost of treating twenty-seven other diseases of which a portion are attributable to syphilis and gonorrhea.

The financial figures were derived from the expenditures of public institutions, city, state and others, private institutions, estimated incomes of physicians, and costs of arrest and prosecution of prostitutes apprehended for medical examination.

Records of the city institutions for 1932 show that approximately 54,219 days of hospital care, 56 per cent of the total hospitalization in the two city hospitals, were for the care of patients suffering directly from venereal disease or other diseases complicated by venereal disease. The cost including overhead and clinic charges was \$212,000. An additional \$90,000 was spent for tests and examinations, treatments at the Municipal Venereal Disease Clinic, caring for feeble-minded congenital syphilitics in the St. Louis Training School, quarantining of infectious prostitutes and furnishing special educational facilities for the semisighted, deaf and mentally handicapped children whose condition could be attributed to venereal disease. The total annual expenditure by city institutions caused by venereal disease is between \$400,069 and \$414,440.

From tax reports it was found that metropolitan St. Louis contributes 41 per cent of the cost of supporting persons from other sections of the state cared for by state institutions. Forty-one per cent of the state's expenditure due to venereal disease approximates \$88,170.

Using an estimate made by the United States Public Health Service in 1928 as a basis, there are 10,457 venereal disease cases in metropolitan St. Louis undergoing treatment by private physicians outside of hospitals at an approximate cost of \$236,000. The average fee for a doctor's visit to a patient in a private hospital as estimated by a number of physicians active in private hospital work is \$5.00. A physician averages visiting a patient once every two days making the physician's fee \$2.50 the hospital day. The hospitals estimated that the number of days of hospitalization on account of venereal disease indicate an expenditure of \$287,500 paid by patients in private hospitals to physicians.

Twenty-five private hospitals reported an ag-

gregate of 88,238 hospital days caused by venereal disease, i. e., 15,654 days for treatment of syphilis and gonorrhea and 72,584 days for treatment of diseases in which venereal disease was a causative or complicating factor.

The survey does not attempt to estimate the amount paid to quacks and charlatans, but states that the situation in St. Louis is relatively satisfactory as compared to other cities, partially because of the excellent cooperation extended by local newspapers in suppressing quack advertising.

Cost figures based upon drug store sales were not included in the survey but an analysis of the sources of previous treatment among 150 patients questioned at the Municipal Venereal Disease Clinic reveals that 23 per cent resorted to drug store treatment or self-treatment, presumably with the aid of drug store remedies.

The conclusions of the survey are: (1) The total annual cost of venereal disease to metropolitan St. Louis is represented by a sum ranging between \$2,071,000 as a minimum and \$2,560,000 as a maximum; (2) many additional venereal disease costs are not susceptible of financial analysis. During normal periods of business activity general economic losses would loom even larger than the above estimates, and (3) the cost of adequate first year treatment of syphilis is much in excess of annual amounts available for health expenditures in the budgets of workingmen's families.

The survey is a careful piece of work, both in the planning and in the carrying out. Estimates where necessary were logically made but the survey is principally based on definite and accurate figures. It is supposed to be the first survey of its kind undertaken in any city in the United States.

While the survey was made as an aid in promoting social hygiene in its manifold phases it is a valuable addition to medical literature.

NEWS NOTES

Dr. Richard S. Weiss, St. Louis, was the guest of the Madison County (Illinois) Medical Society, April 7, at Collinsville. He delivered an address on "The Precancerous Dermatoses."

Dr. J. Curtis Lyter, St. Louis, was a guest of the Marion County (Illinois) Medical Society at a dinner at Centralia, March 30. Dr. Lyter delivered an address on "Pathology and Clinical Symptoms and Treatment of Diseases of the Coronary Arteries."

The scientific session of the American Heart Association will be held June 13 from 9:30 a. m. to 5:30 p. m. in Milwaukee at the Knickerbocker Hotel.

Dr. John R. Caulk, St. Louis, was a guest of the Fort Wayne (Indiana) Medical Society March 21 and delivered an address on "The Transurethral Method of Prostate Removal."

The monthly meeting of the St. Louis Trudeau Club will be held May 11 at 8 p. m. at the Robert Koch Hospital. Members of the staff of the hospital will furnish the program.

"Is the Modern Family Breaking Up?" was the central subject for discussion at the annual meeting of the Missouri Society for Mental Hygiene which was held April 20 in St. Louis. Included in the program was an address by Dr. James F. McFadden, St. Louis, on "Human Personality and Family Life."

The third number of *The Hebrew Physician* (*Harofeh Hoibri*), the only Hebrew medical journal published outside of Palestine, was recently issued. The journal is published at 983 Park Avenue, New York City. This issue has 168 pages containing numerous articles on general medicine and special sections on health in Palestine, on Talmud and Medicine and on Hebrew medical terminology.

Rev. Alphonse M. Schwitalla, S. J., dean of the St. Louis University School of Medicine, St. Louis, was a guest of the New York State Medical Society at New York April 4. He delivered an address based on the minority report of the Committee on the Costs of Medical Care. He stressed the necessity of the practice of medicine remaining under the control of the medical profession.

Drs. E. E. Glenn, Mount Vernon; Jesse E. Douglass, Webb City, and Forrest A. Harrison and John W. Williams, Springfield, delivered addresses at a tuberculosis conference held in Springfield, April 20. The conference was held by the Missouri Tuberculosis Association with Mr. Philip P. Jacobs, Ph.D., director of publications and extension, as honor guest. Mr. Jacobs spent a week in Missouri reviewing the work of the Missouri Tuberculosis Association, on the invitation of the executive committee of the association.

St. James Hospital, St. James, Mo., was recently opened as a general hospital. The institution was originally built as a convalescent hospital but has been equipped and staffed for general hospital work including roentgen ray laboratory and operating facilities. The institution is open to all reputable physicians. Several St. Louis physicians are on the consulting staff. Dr. E. A. Scott, St. James, is owner and superintendent. The hospital is located on a tract of 120 acres adjoining St. James.

Training courses for teachers in sight saving class work will be given at three colleges this summer. Western Reserve University, Cleveland, will offer a course from June 19 to July 28; the University College, University of Chicago, Chicago, from June 26 to August 1, and the Teachers' College, Columbia University, New York City, from July 10 to August 18. A course may be offered at the State Teachers College, Buffalo, New York. Sight saving classes are now a part of the educational systems in 119 communities throughout the United States, according to the National Society for the Prevention of Blindness.

The annual spring clinic of the St. Joseph Clinical Society was held in St. Joseph April 19 and 20 with the Buchanan County Medical Society cooperating. Scientific addresses were delivered each afternoon and evening and the morning sessions were devoted to medical and surgical clinics conducted by St. Joseph physicians at the Missouri Methodist and St. Joseph's hospitals. Among the guest speakers were Dr. P. C. Jeans, Iowa City; Dr. Norman Keith, Rochester, Minnesota; Drs. Earl C. Padgett and Logan Clendening, Kansas City; Drs. John R. Caulk and Alexis F. Hartmann, St. Louis; Dr. W. P. Wherry, Omaha, and Dr. Karl A. Menninger, Topeka, Kansas.

The American Association for the Study of Goiter will convene in Memphis, Tennessee, with headquarters at the Peabody Hotel, May 15, 16 and 17. Hospital clinics will be held each morning from 8 to 10 o'clock at one of the hospitals and will be followed by diagnostic clinics. Scientific addresses on various phases of goiter will be presented each afternoon of the session. Any physician in good standing in his local medical society is invited to attend and participate in the discussions.

The association is arranging for a delegation to attend the International Goiter Conference to be held in Bern, Switzerland, August 10, 11 and 12. Rates have been obtained leaving New

York, July 27. Programs on goiter subjects will be held each morning and afternoon en route. Further information about this trip may be obtained by writing Dr. J. R. Yung, corresponding secretary, Terre Haute, Indiana.

The following articles have been accepted for New and Nonofficial Remedies:

Don Baxter Intravenous Products Corporation
Sterile 2½% Dextrose Solution in Vacoliter Container

Sterile 7½% Dextrose Solution in Vacoliter Container

Sterile 20% Dextrose Solution in Vacoliter Container

Sterile 25% Dextrose Solution in Vacoliter Container

Bilhuber-Knoll Corporation

Metrazol Solution 10 per cent

Diarsenol Co., Inc.

Neodiarsenol, 1.5 Gm. Ampoules

Neodiarsenol, 3 Gm. Ampoules

Neodiarsenol, 4.5 Gm. Ampoules

Hixson Laboratories, Inc.

Diphtheria Toxin Antitoxin Mixture 0.1 L+

Diphtheria Toxin Antitoxin Mixture 0.1 L+ (Sheep)

Diphtheria Toxoid

Diphtheria Toxoid two 1 c.c. vial package

Diphtheria Toxoid one 10 c.c. vial package

Diphtheria Toxoid one 30 c.c. vial package

Diphtheria Toxoid twenty 1 c.c. vial package

Lederle Laboratories, Inc.

Plantain Pollen Antigen—Lederle

Merck & Co., Inc.

Chlorbutanol (Hydrous)—Merck

Chlorbutanol (Anhydrous)—Merck

Neocinchophen—Merck

Ridge Farm, the country convalescent home of the St. Louis Children's Hospital, was reopened April 3. The home was closed a year ago because of the curtailed revenue of the hospital. Funds to provide for the maintenance of the home for the remaining nine months of this year were furnished by the Community Fund.

The home has beds for sixty children and has cared for as many as seventy-six patients at one time. Children suffering from bone diseases, heart trouble, asthma and other chronic diseases, as well as children recovering from acute diseases, are cared for at the home. The average length of time spent at the home is four months, although in some instances patients have remained there for a year or longer. During the time Ridge Farm was closed St. Louis was without any institution for chronic and convalescent cases of children.

The Mid-Western Section of the American College of Physical Therapy will conduct a one day scientific program on May 15 at the Hotel Jefferson, Peoria, Illinois, immediately preceding the annual meeting of the Illinois State Medical Society which meets in Peoria, May 16 to 18. An instructive program has been arranged and the medical profession is invited to attend the session. There will be no registration fee.

OBITUARY

JOSEPH STANLEY LICHTENBERG, M.D.

Joe Lichtenberg missed being a "native son" of Kansas City by ten years. His parents moved here from Detroit, Michigan, in 1880. His father was widely known in Kansas City as a manufacturing optician and owned the first official barometer in this territory. Readings from this instrument were telegraphed daily to many cities as a basis for weather forecasts before the establishment of the government bureau.

Dr. Lichtenberg spent many years in his father's shop grinding lenses, which was the background for his later development into a nationally known specialist. He was a descendant of a distinguished Semitic ancestry and his progenitors were instrumental in shaping the policy and destiny of Reformed Judaism in America. After he had finished his high school education he was graduated from the University Medical College of Kansas City in 1896. He later pursued his studies in Vienna and Prague. Dr. Lichtenberg was one of the first men in this part of the United States to use glasses for the correction of strabismus. He was severely scientific in his work and had little patience with the inefficient pretender. Joseph Lichtenberg was an understanding, patient teacher and generous in his praise of sincere effort. He had two hobbies; one was scientific medicine; the other travel. He loved life, friends and home. Although childless he rarely met a little child that did not kindly accept his overtures of admiration and affection. The finest compliment that can be paid to Dr. Joe Lichtenberg is to say that "he was a man" which requirement he generously fulfilled. He was conspicuously charitable in his contact with the very young, the very old and the very poor.

He was a genial host and a welcome guest at any social or scientific function. He was active and popular in the circles of organized medicine. He made many contributions to science and readily accepted new developments in his field. He was a linguist of no mean abil-

ity and was familiar with five different languages. Joe Lichtenberg had a fine sense of humor and took delight in relating subtle stories that reflected racial characteristics. He contributed his services to the activities of the World War and was honorably discharged at its termination.

Dr. Joseph Stanley Lichtenberg was a member of Jackson County Medical Society, the Missouri State Medical Association and a fellow of the American Medical Association; a member of the American Academy of Ophthalmology and Otolaryngology; Kansas City Academy of Medicine; a diplomate of the National Board of Ophthalmology and was also a fellow of the American College of Surgeons. He belonged to the Chamber of Commerce, the Kansas City Athletic Club, the Oakwood Country Club and the Knife and Fork Club. At the time of his death he was Chairman of the Necrological Committee of the Jackson County Medical Society.

Dr. Joseph Stanley Lichtenberg was a man of intelligence and culture and at all times a sympathetic friend and counselor. If his biographer were allowed only one word with which to describe him, he would say that he was a gentleman. If he were permitted the use of two words he would say that he was a perfect gentleman.

The first line of Leigh Hunt's immortal poem, "Abou ben Adhem" has an appealing significance, "may his tribe increase."

M. A. HANNA, in the Jackson County Medical Journal.

WILLIAM KERWIN, M.D.

Dr. William Kerwin, St. Louis, assistant professor of gynecology and obstetrics at St. Louis University School of Medicine, died at St. Mary's Hospital, March 6, of an affliction of the heart, aged 47.

Dr. Kerwin was a graduate of the Washington University School of Medicine in 1907. He began private practice in St. Louis and continued this practice after he joined the teaching staff of the St. Louis University School of Medicine seventeen years later. He was head of the department at St. Mary's Hospital until he was forced from active practice in November by his illness. Rheumatism and a heart ailment were thought to have culminated in a streptococcic infection of the heart. His case was studied by many physicians and laboratories throughout the country answered appeals to find some agent to stay the progress of the disease without avail.

Dr. Kerwin was active in organized medicine and held a double place in the medical life of his

community, as teacher and as private practitioner. His death is widely felt because all who knew him valued his ability and his friendship.

He is survived by his widow, Mrs. Myra Kerwin, three daughters, a son, his mother and a sister.

THOMAS WILLIAM SCANLON, M.D.

Dr. Thomas W. Scanlon, Polo, was killed by a train at a railroad crossing at Higginsville, March 15. Dr. Scanlon had practiced medicine in Polo since 1905. He was 64 years old.

Dr. Scanlon was born in Breckenridge and lived there until early manhood. After receiving his early education in his own community he went to Kansas City. He was employed in the street railway service and in the city tax department and while still employed began his study of medicine in the Medico-Chirurgical College of Kansas City. He received his medical degree in 1905 and went to Polo to begin the practice of medicine and he purchased a drug store which he operated. He was active in his practice of medicine and was active in medical and civic affairs and was a strong supporter of organized medicine.

Dr. Scanlon was a valuable member of the Caldwell-Livingston County Medical Society and his death is a distinct loss to the County Society and to the State Association.

Dr. Scanlon never married. He is survived by three brothers.

GEORGE ALEXANDER GRAHAM, M.D.

Dr. George A. Graham, Kansas City, died at his home, March 23. He had been a physician in Kansas City since 1886. He was 73 years old.

Dr. Graham was born in Oakville, Ontario, and received his early education in Toronto and later was graduated from the McGill University Faculty of Medicine in Montreal. In 1885 he went to Chicago and in the following year moved to Kansas City and began his practice there. For seventeen years he was medical examiner for the Western Union Telegraph Company and served for many years as a lieutenant in the volunteer medical corps of the United States Public Health Service.

Dr. Graham was an interested and active member of organized medicine having allied himself with the Jackson County Medical Society in 1911. Following an illness in 1925 which caused permanent disability Dr. Graham was made an Honor Member of his County Society. He was highly esteemed and loved by his colleagues and friends.

He is survived by his widow, Mrs. Ida E. Graham.

CORRESPONDENCE

BOGUS LIQUOR SALESMAN

Kansas City, Missouri, April 18, 1933.

To the Editor:

For your information, there is quoted below excerpt from letter, dated April 14, 1933, from J. M. Doran, Commissioner of Industrial Alcohol:

"Information has been received by me that a salesman with business cards giving the name of Robert S. Downs, and various aliases, has solicited doctors and dentists through the middle west and northwest territory, with the object of effecting sales of liquor to them under fraudulent representations; that this party has a fake order form on which the names of the companies which he purports to represent are misspelled and bears a permit number which does not exist; that he takes the doctor's or dentist's orders, collects cash in payment for same, and then absconds.

"It appears that Downs commenced his activities as a salesman in Nebraska, then operated through the western part of Iowa, in the southern part of Minnesota, the States of Kansas, South Dakota, and Idaho, and thence to the State of Washington. As late as April 7, 1933, however, he has negotiated a fake sale at Goodland, Kansas.

"The sales slips and business cards of Downs indicate that he is a representative of the Industrial Alcohol Corporation, American Medical Spirits, Frankford Distilleries, and the Italian Swiss Colony Wineries. These names are not correctly stated. Properly, the names should be shown as follows: *U. S. Industrial Alcohol Company, Frankfort Distillery, American Medicinal Spirits Company, Italian Swiss Colony.*

"It also appears that this party has operated under the names of Roland Watson, R. H. Wells, R. S. Stone, A. H. Davis, and at times under the name of Coleville. The following is an exact copy of the card of Roland Watson, and you will note that the names of the companies shown are either misspelled or incorrectly stated:

"U. S. Industrial Alcohol Corporation
Peroia, Ill.

Distributors

Frankford Distilleries

American Medical Spirits

Italian Swiss Colony Wineries

Roland Watson, Rep."

The misspelling, no doubt, was deliberate and for the purpose of avoiding prosecution, in case the party exhibiting the card was apprehended."

(Signed) SAM S. HALEY,
Supervisor of Permits.

BILATERAL CERVICAL CHORDOTOMY

Max M. Peet, Edgar A. Kuhn and Samuel S. Allen, Ann Arbor, Mich. (*Journal A. M. A.*, Feb. 18, 1933), present a case of chronic arthritis that required the control of pain in both lower extremities and, in addition, the right arm and shoulder. The pain was abolished without risk of respiratory paralysis by sectioning the tract at the third cervical segment on one side and approximately the eighth cervical segment on the other. This produced the greatest area of analgesia in any patient of their series of seventy patients on whom anterolateral chordotomy has been performed in their clinic. Foerster's case is the only one in the literature they have found in which a greater area of analgesia has been obtained.

MISSOURI STATE MEDICAL ASSOCIATION**76th Annual Meeting, President Hotel, Kansas City**

The 76th Annual Meeting of the Association convenes at Kansas City, Monday, Tuesday, Wednesday and Thursday, May 1, 2, 3 and 4. The House of Delegates will convene Monday, May 1, and hold its first session when a large part of the business of the Association will be transacted.

HOUSE OF DELEGATES**Congress Room, President Hotel****First Meeting—Monday, May 1, 1933—9:30 A. M.****Order of Business**

Roll Call.
Reading of Minutes of Previous Meeting.
Reading of President's Message and Recommendations.
Appointment of Reference Committees—
 Committee on Amendments to the Constitution and By-Laws.
 Committee on Resolutions.
 Committee on Miscellaneous Affairs.
Report of Committee on Arrangements: A. J. Welch, Kansas City, Chairman.
Report of Secretary.
Report of Treasurer.
Report of Committee on Scientific Work: E. J. Goodwin, St. Louis, Chairman.
Report of Committee on Public Policy: J. F. Harrison, Mexico, Chairman.
Report of Committee on Publication: J. C. B. Davis, Willow Springs, Chairman.
Report of Committee on Defense: C. E. Hyndman, St. Louis, Chairman.
Report of Committee on Medical Education and Hospitals: R. A. Woolsey, St. Louis, Chairman.
Report of Committee on Cancer: Ellis Fischel, St. Louis, Chairman.
Report of Committee on Postgraduate Course: C. H. Neilson, St. Louis, Chairman.
Report of Committee on Medical Economics: Robert Vinyard, Springfield, Chairman.
Report of Committee on Constitution and By-Laws: M. P. Overholser, Harrisonville, Chairman.
Report of Special Committees—
 McAlester Memorial Foundation, A. R. McComas, Sturgeon, Chairman.
 Military Committee, Lee D. Cady, St. Louis, Chairman.
Appointment of Committee on Nominations.

Recess till 3:00 P. M.

Report of the Council: A. R. McComas, Sturgeon, Chairman.
Report of Reference Committees:
 Committee on Amendments to the Constitution and By-Laws.
 Committee on Resolutions.
 Committee on Miscellaneous Affairs.
New Business (Resolutions, Memorials, etc.)
Selection of Place of Next Meeting.

Second Meeting, Wednesday, May 3, 1933—3:30 P. M.

Roll Call.
Reading of Minutes.
Election of Officers:
 Election of President-Elect.
 Report of Committee on Nominations.
Installation of President.
Nominations for Standing Committees by President and Confirmation by House of Delegates.
Unfinished Business.

GENERAL MEETING**Tuesday, May 2, 1933—8:30 A. M. Congress Room, President Hotel**

Address of the President.....Joseph W. Love, M.D., Springfield

Address of the President-Elect.....W. Logan Allee, M.D., Eldon

Symposium on Diseases of the Liver:

The Role of the Hepatic Function in Surgical Problems.....
.....Warren H. Cole, M.D., St. Louis

- Parenchymatous Hepatic Disease.....Charles A. Elliott, M.D., Chicago
Sponsor, Dr. Frederick C. Narr, Kansas City
The Relationship of the Liver to Other Visceral Organs in Disease....
.....Ferdinand Helwig, M.D., Kansas City
The Symptoms and Treatment of the Cirrheses of the Liver.....
.....George H. Hoxie, M.D., Kansas City
Jaundice.....Donald R. Black, M.D., Kansas City
End of Symposium
- Arteriosclerosis of the Lower Extremities With Special Reference to
Treatment in Diabetic Gangrene.....Wm. H. Olmsted, M.D., St. Louis
- Operation for Retroversion of the Uterus and Varicosities of the Broad
Ligaments.....E. M. Hetherington, M.D., Kansas City
- Narcolepsy.....E. T. Gibson, M.D., Kansas City
- The Increasing Significance of Allergy.....Carl J. Reis, M.D., St. Louis

GENERAL MEETING

Tuesday, May 2, 1933—1:30 P. M. Congress Room, President Hotel

- Headaches Associated With Endocrine Disorders.....
.....Daniel L. Sexton, M.D., St. Louis
- Diagnosis and Treatment of Diseases of the Thyroid Gland.....
.....Arnold S. Jackson, M.D., Madison, Wisconsin
Sponsor, Dr. James E. Stowers, Kansas City
- Effect of the Thyroid, Pituitary and Gonads on Preadult Development....
.....August A. Werner, M.D., St. Louis
- Symposium on Diseases of the Heart:
Demonstration of the Lahey Clinic Film of Electrocardiography (Very
Elemental).....R. C. Davis, M.D., Kansas City
Auricular Fibrillation and Flutter.....R. C. Davis, M.D., Kansas City
Heart Block.....Lee B. Harrison, M.D., St. Louis
Extrasystoles and Paroxysmal Tachycardia Other Than Flutter.....
.....Carl R. Ferris, M.D., Kansas City
Congestive Heart Failure.....Peter T. Bohan, M.D., Kansas City
The Arrhythmias Associated With Thyrotoxicosis.....
.....Elsworth Smith, M.D., St. Louis
End of Symposium
- Gastric Symptoms of Acute Heart Disease..A. M. Ginsberg, M.D., Kansas City
- Treatment of Cardiac Episodes of Middle Life...O. P. J. Falk, M.D., St. Louis

GENERAL MEETING

Session Open to the Public

Tuesday, May 2, 1933—8:00 P. M. Congress Room, President Hotel

- Cause and Prevention of Goiter..Arnold S. Jackson, M.D., Madison, Wisconsin
- Behind the Doctor.....Logan Clendening, M.D., Kansas City
- Trachoma in the White Population of the United States. Motion Picture
Demonstration.....C. E. Rice, M.D., Rolla

GENERAL MEETING

Wednesday, May 3, 1933—8:30 A. M. Congress Room, President Hotel

- Symposium on Gastro-Intestinal Diseases:
Dilatation of the Esophagus.....D. A. Williams, M.D., Kansas City
Gastric and Duodenal Ulcer.....
.....J. W. Thompson, M.D., and Horace W. Soper, M.D., St. Louis
Intestinal Obstruction.....T. G. Orr, M.D., Kansas City
Colitis.....Harry G. Bristow, M.D., St. Louis
Carcinoma of the Colon.....Omar R. Sevin, M.D., St. Louis
End of Symposium

- Renal Complications of Gallbladder Disease.....Willard Bartlett, Jr., M.D., St. Louis
- Anorectal Infection: Its Relation to General Medicine.....F. B. Campbell, M.D., Kansas City
- Simplicity in the Treatment of Anorectal Diseases.....Paul V. Woolley, M.D., Kansas City
- The Referred Symptoms of Anorectal Diseases; Their Probable Modes of ProductionGeorge H. Thiele, M.D., Kansas City
Discussion opened by Dr. Warren R. Rainey, St. Louis
- The Bleeding Duodenal Ulcer.....Claude J. Hunt, M.D., Kansas City
- Tetanus Infection Treated With Antitoxin and Avertin.....F. A. Harrison, M.D., Springfield, and H. L. Higgins, M.D., Boston, Mass.

GENERAL MEETING

Wednesday, May 3, 1933—1:30 P. M. Congress Room, President Hotel

- Enlarging Conceptions of Mycotic Infections of the Skin.....Thomas B. Hall, M.D., Kansas City
- Interpretation of Pathological Reflexes...Marvin L. Bills, M.D., Kansas City
- The Management of Bladder Diverticulae.....J. E. Glenn, M.D., and C. E. Burford, M.D., St. Louis
Discussion opened by Dr. Otto J. Wilhelmi, St. Louis
- Transurethral Prostatectomy: Indications and Limitations.....J. Hoy Sanford, M.D., St. Louis
Discussion opened by Dr. J. E. Burns, Kansas City
- Avoiding Complications in Gynecological Radium Therapy.....E. Kip Robinson, M.D., Kansas City
- A Preview of My New Book on Diseases of the Breast (Lantern Slides).....A. E. Hertzler, M.D., Kansas City

At 3:30 p. m. the General Meeting will adjourn and the House of Delegates will convene.

GENERAL MEETING

Thursday, May 4, 1933—8:30 A. M. Congress Room, President Hotel

Prepared Under the Direction of Dr. Sam H. Snider, Kansas City

Symposium on Tuberculosis

- Simple Silicosis and Silicotuberculosis as a Medical and Industrial Problem.....L. C. Boisliniere, M.D., St. Louis
Discussion opened by Dr. Jesse E. Douglass, Webb City
- Tuberculosis in Childhood.....Sam H. Snider, M.D., Kansas City
Discussion opened by Dr. Harry C. Berger and Dr. George H. Hoxie, Kansas City
- Diagnosis and Prognosis of Adult Pulmonary Tuberculosis.....George D. Kettelkamp, M.D., Koch
Discussion opened by Dr. H. L. Mantz, Kansas City
- Nonsurgical Treatment of Tuberculosis Including Pneumothorax.....J. B. Stokes, M.D., Mount Vernon
Discussion opened by Dr. L. E. Wood, Kansas City
- Surgical Treatment of Pulmonary Tuberculosis.....Duff S. Allen, M.D., St. Louis
Discussion opened by Dr. W. W. Buckingham and Dr. Earl C. Padgett, Kansas City
- Tuberculosis of Bones and Joints.....Frank D. Dickson, M.D., Kansas City
Discussion opened by Dr. James R. Elliott, Kansas City

GENERAL MEETING

Thursday, May 4, 1933—2:00 P. M. Congress Room, President Hotel

Under the Auspices of the Kansas City Society of Ophthalmology and
Otolaryngology in Cooperation With the Ophthalmic Section
of the St. Louis Medical Society
Dr. O. S. Gilliland, Kansas City, Presiding

Symposium on Diseases of the Eye, Ear, Nose and Throat

Medicosociologic Aspects of Chronic Glaucoma. . . John Green, M.D., St. Louis
Trachoma in the White Population of the United States. . . Motion Picture
Demonstration. C. E. Rice, M.D., Rolla
The Relationship Between Diseases of the Nose, Throat and Ear and
Pulmonary Diseases. L. W. Dean, M.D., St. Louis
The Development of the Tear-Sealing Operation Up-to-Date.
Peter C. Kronfeld, M.D., Chicago
Vertigo. J. Gordon Wilson, M.D., Chicago

A clinic on Diseases of the Eye, Ear, Nose and Throat will be held at the
General Hospital during the morning of Thursday, May 4.

Dr. Kronfeld, of Chicago, will conduct a diagnostic clinic on Diseases of
the Eye. He will be sponsored by Dr. A. E. Eubank, Kansas City.

Dr. Wilson, of Chicago, will conduct a diagnostic clinic on Diseases of the
Ear. He will be sponsored by Dr. Homer A. Beal, Kansas City.

SCIENTIFIC EXHIBITS

President Hotel

Cancer Exhibit. Dr. F. L. Rector, Field Representative,
American Society for the Control of Cancer, New York City
Extragenital Primary Syphilis of Mucous Membranes and Skin.
Dr. Norman Tobias, St. Louis

COMMERCIAL EXHIBITS

President Hotel

THE A. S. ALOE COMPANY, St. Louis, Space 14.

The Aloe booth will feature a display of the new Aloe Radio Knife, the Gold Seal Portable
Diatherm and a complete line of Chrome Plated Instruments, Dressings and sundries at
specially low prices. The company invites every one attending the Annual Meeting of the
Association to visit Booth No. 14.

DEVILBISS COMPANY, Toledo, Ohio, Space 5.

Manufacturers of medicinal atomizers, will display the new vented nasal guard which
eliminates any possibility of excess pressure in the nasal cavities; also, a complete line
of Devilbiss atomizers and vaporizers (nebulizers) for both home and professional use.
Mr. W. Thompson will be in charge of this display, and invites all physicians to visit
this exhibit.

GERBER PRODUCTS COMPANY, Fremont, Michigan, Space 13.

The new Gerber product, Cereal, cooked in milk and strained ready for feeding, will be
on display at the Gerber Exhibit, booth No. 13. This cereal is intended as the infant's
first semi-solid food. A combination of whole grain cereals with added wheat germ is
cooked in whole milk and strained so as to retain the nutrients of the whole grains. The
resulting product is of such fineness that clinical trials with infants who have been diffi-
cult feeding cases, show good results. Information and a display of all Gerber Products,
Cereal, Vegetables and Prunes, and copies of publications will be at the booth and avail-
able to you.

THE W. E. ISLE COMPANY, Kansas City, Missouri, Space 6.

Manufacturers of artificial limbs, orthopedic appliances, extensions, corsets, sugical sup-
ports and stump socks for artificial limb wearers. They will also exhibit elastic hose,
crutches, crutch cushions and crutch tips. Mr. E. C. Davis, orthopedic representative,
will be in charge of this exhibit. An invitation is extended to all doctors to visit the fac-
tory and meet Mr. W. E. Isle, owner and manager of the business, who has had twenty-
seven years' experience in building and fitting artificial limbs and orthopedic appliances.

MEAD JOHNSON & COMPANY, Evansville, Indiana, Space 12.

Will exhibit a complete line of infant diet materials including Mead's Dextri-Maltose,
Mead's Newfoundland Cod Liver Oil, Mead's Viosterol in Oil 250D, Mead's 10D Cod
Liver Oil, Mead's Halibut Liver Oil products, Mead's Brewer's Yeast Powder, Mead's
Cereal, Sobee, Mead's Powdered Protein Milk, Mead's Powdered Lactic Acid Milk, Mead's
Powdered Whole Milk, Alacta, Reolac, Casec and Mead's Mineral Mixture.

There will also be a complete line of Mead's services, such as diets for older children,
height and weight charts, etc., all free to the medical profession in any quantity desired.
Representatives will meet you and discuss the application of Mead products to infant
feeding problems.

SOCIETY PROCEEDINGS

COUNTY SOCIETY HONOR ROLL FOR 1933

(UNDER THIS HEAD WE LIST SOCIETIES WHICH
HAVE PAID DUES FOR ALL THEIR MEMBERS)

HONOR ROLL

Mercer County Medical Society, December 10, 1932.

Moniteau County Medical Society, January 13, 1933.

Ste. Genevieve County Medical Society, January 19, 1933.

Camden County Medical Society, January 20, 1933.

Dent County Medical Society, February 1, 1933.

Chariton County Medical Society, February 10, 1933.

BOONE COUNTY MEDICAL SOCIETY

The Boone County Medical Society met in McAlester Hall, Columbia, April 4, with a good attendance including visitors from St. Charles, Jefferson City and Moberly and the medical students from the University of Missouri.

A request by the parks and playground committee that the Society endorse a year-round playground program in Columbia as well as a public health and nourishment station for the summer months was discussed.

Dr. Frank J. Tainter, St. Louis, was a guest of the Society and presented a paper on "Some Thyroid Problems." Dr. Tainter displayed rare judgment in the practical way in which he handled this subject. The paper was discussed by members of the Society as well as by some of the visitors.

S. D. SMITH, M.D., Secretary.

BUCHANAN COUNTY MEDICAL SOCIETY

The regular scientific session of the Buchanan County Medical Society was called to order by the president, Dr. W. H. Minton, St. Joseph, in the Missouri Methodist Hospital, March 15.

Dr. J. H. Ryan, St. Joseph, delivered an address on "The Surgical Treatment of Diseases Related to Dysfunction of the Autonomic Nervous System." The subject was handled in an able manner and was discussed extensively by Drs. Gregg Thompson, C. H. Wallace, Sr., L. H. Fuson, Cabray Wortley and closed by Dr. Ryan.

Meeting of April 5

The Society was called to order by the president, Dr. W. H. Minton, St. Joseph, at the Missouri Methodist Hospital.

A resolution was adopted at a council meeting immediately preceding the meeting of the Society, instructing the secretary to accept dues for the remainder of the year as follows: \$7.50 down and \$3.75 every three months until paid. This action was taken because of the difficulty many of the members are meeting in their collections.

The second discussion in the series on the medico-

social resources of St. Joseph was led by Dr. L. C. Bauman, president of the St. Joseph board of health, who explained the careful manner in which the water and milk supply of the city is looked after.

EMMETT F. COOK, M.D., Secretary.

CAPE GIRARDEAU COUNTY MEDICAL SOCIETY

The Cape Girardeau County Medical Society met in regular session in the Chamber of Commerce rooms at Cape Girardeau, February 14, with Dr. M. H. Shelby, Cape Girardeau, president, in the chair.

Members present were Drs. M. H. Shelby, J. H. Cochran, E. H. G. Wilson, Sylvester Doggett, and C. A. W. Zimmermann, Cape Girardeau. Guests present were Drs. Asa Barnes, B. A. Wilkes and William Godfroy, Cape Girardeau.

Dr. Shelby appointed a legislative committee as follows: Drs. B. W. Hays and J. J. Drace, and B. A. Wilkes, honorary member.

Dr. B. A. Wilkes, after reading a letter from Dr. E. J. Goodwin, St. Louis, addressed the members concerning H. B. No. 282 recommending the bill and urging activity of the Society toward its passage. The officers of the Society were instructed by vote to begin activities at once.

The program committee was instructed to arrange a joint meeting of the staffs of the two hospitals and the dental society and to secure Rev. Alphonse M. Schwitalla, St. Louis, dean of the St. Louis University School of Medicine, to address the session on "The Minority Report of the Committee on the Costs of Medical Care."

Dr. William Godfroy, intern at the Southeast Missouri Hospital, read a paper on "The Value of Basal Metabolism."

Dr. Asa Barnes read a paper on "Acute Gonorrhea in the Male."

These papers, presented by the youngest representatives of the profession in Cape Girardeau County, were heard with great attention, deep interest and appreciation. Discussions and questions which followed evidenced the profit gained.

Meeting of March 13

The Society met in Cape Girardeau, March 13, with Dr. M. H. Shelby, Cape Girardeau, president, presiding.

Members present were Drs. M. H. Shelby, B. W. Hays, J. H. Cochran, W. N. Howard, E. H. G. Wilson, N. F. Chostner and C. A. W. Zimmermann, Cape Girardeau. Dr. Asa Barnes, Cape Girardeau, was a guest.

Dr. N. F. Chostner read a comprehensive paper on "Measles." Every member present took part in the discussion which followed.

C. A. W. ZIMMERMANN, M.D., Secretary.

CARTER-SHANNON COUNTY MEDICAL SOCIETY

The Carter-Shannon County Medical Society met in the office of Dr. Frank Hyde at Eminence, April 7.

Dr. Hyde was elected chairman and Dr. W. T. Eudy, Eminence, secretary for the year 1933.

Drs. J. C. B. Davis and F. N. Saville, Willow Springs, and Dr. H. Kirkendall, a dentist of Birch Tree, were visitors.

An interesting case of noma was presented by Dr. T. W. Cotton, Van Buren. The case was discussed by Drs. Eudy, Cotton, Hyde and Saville.

Dr. Kirkendall told of a case of edema of the gums which was considered rare and interesting and prom-

ised to report some investigation of the case at a later meeting.

W. T. EUDY, M.D., Secretary.

JASPER COUNTY MEDICAL SOCIETY

The Jasper County Medical Society met in Joplin March 14 with twenty members present.

Dr. Charles T. Reid, Joplin, read a paper on "Tic Douloureux."

Dr. W. L. Post, Joplin, discussed some cases of tic facial neuralgia which he has seen.

Dr. Soash, D.D.S., spoke on facial neuralgia from the dental standpoint. Further discussion was contributed by Drs. J. W. Barson, S. H. Miller, L. C. Chenoweth, of Joplin, and Dr. J. W. Clark, Carterville. Dr. Reid closed the discussion.

Meeting of March 21

The meeting of March 21 was called to order with eight members present.

A letter from the Maternity Center, New York City, concerning a program for the week preceding Mothers' Day was read. The Society took no action.

A paper written by Miss Pearl Moorman on "The Use of 1 Per Cent Hydrochloric Acid in Asphyxia" was read.

Drs. B. E. De Tar, P. W. Walker, A. B. Clark, Joplin, and J. E. Douglass, Webb City, reported interesting cases.

Meeting of March 28

Dr. E. E. Moody, Joplin, read a paper on "Nephrosclerosis in Children," and reported one case. The paper dealt with those cases in which rickets is associated with chronic nephritis due to the resulting unbalance of the calcium phosphorus ratio in the blood produced by the failure of the injured kidneys to excrete the excess phosphorus. This phosphorus of necessity is passed through the intestines and forms insoluble calcium salt, hence there is a resulting calcium deficiency in the blood and the bones fail to grow properly.

After a lengthy discussion by members, Dr. Moody closed the discussion emphasizing the necessity of compensatory feeding of proteins, controlling infection and the elimination of salts from the diet.

Meeting of April 4

The Jasper County Medical Society met April 4 in Joplin with sixteen members present.

The following cases were presented: Dr. Lloyd B. Clinton, Carthage, a case of ectopic pregnancy with recovery of the embryo; Dr. E. E. Moody, Joplin, a case of coronary disease in a boy eleven years of age, and Dr. John W. Barson, Joplin, a case of ectopic pregnancy at the site of the ovary.

Dr. Frances Rosenthal, Joplin, presented a paper on "Dietary Deficiencies in Ocular Disease." The paper emphasized the necessity of a balanced vitamin diet in treating many ocular diseases.

PAUL W. WALKER, M.D., Secretary.

ST. FRANCOIS-IRON-MADISON COUNTY MEDICAL SOCIETY

The St. Francois-Iron-Madison County Medical Society met at Farmington March 23 at 7:30 p. m., Dr. D. Appleberry, River Mines, presiding.

Two interesting speakers were sent to the Society by the Postgraduate Committee of the State Association. Dr. M. F. Engman, Jr., St. Louis, spoke on "The Treatment of Syphilis," and Dr. W. G. Becke, St. Louis, spoke on "The Treatment of Diabetes Mellitus."

The following officers were elected: President, Dr. Harry Barron, Fredericktown; vice president, Dr. Ralf Hanks, Farmington; secretary and treasurer, Dr. S. C. Slaughter, Fredericktown, and delegate, Dr. H. M. Roebber, Bonne Terre.

The next regular meeting will be held at Farmington in April.

C. H. APPLEBERRY, M.D., Secretary.

ST. LOUIS COUNTY MEDICAL SOCIETY

The St. Louis County Medical Society met February 8 at the St. Louis County Hospital.

Dr. Sam A. Bassett, Clayton, and Dr. K. Ellis Sherrill, St. Louis, were elected to active membership.

Dr. F. W. Bailey, St. Louis, was a guest of the Society and presented an address on appendicitis entitled "Playing Favorites." It was fully discussed.

Meeting of March 8

The Society held its regular monthly meeting March 8 at the St. Louis County Hospital.

Dr. F. A. Jostes, St. Louis, was a guest of the Society and spoke on "Fractures."

Dr. W. G. Patton, St. Louis, new superintendent of the St. Louis County Hospital, was introduced and gave a short talk.

Drs. L. L. Turen, J. J. Gitt and E. R. Cooper were elected to active membership, the first two on application and the latter by transfer from the St. Louis Medical Society.

The Society voted that a telegram be sent to Senator Brogan in opposition to H. B. No. 174.

O. P. HAMPTON, JR., M.D., Secretary.

VERNON-CEDAR COUNTY MEDICAL SOCIETY

The Vernon-Cedar County Medical Society met at Nevada December 1.

Drs. Dudley A. Robnett and M. Pinson Neal, Columbia, were guests of the Society. Dr. Robnett presented a paper on "Skin Cancers, Their Recognition and Treatment," and Dr. Neal spoke on "Leukocyte Count as an Aid in Diagnosis and Prognosis." Both papers were informative and were fully discussed. Dr. Robnett's paper was illustrated with lantern slides and a five reel film on "Skin Cancers" was shown through the courtesy on the *American Journal of Cancer*.

The following officers were elected: President-Elect, Dr. E. R. King, Nevada; secretary, Dr. L. L. Cooper, Nevada; delegate, Dr. A. G. Altham, Sheldon; alternate, Dr. E. H. Liston, Nevada; member on public policy committee, Dr. J. W. Dawson, Eldorado Springs.

The meeting was attended by approximately 125 laymen and 25 physicians.

Meeting of February 23

The meeting was called to order by the president, Dr. John R. Williams, Eldorado Springs.

Drs. Forest A. Harrison and A. L. Anderson, Springfield, were guests of the Society. Dr. Harrison spoke on "Juvenile Tuberculosis" and exhibited interesting roentgen ray films and pathological specimens.

Dr. Anderson delivered a paper on "Pitfalls in Diagnosis," principally from the internist's viewpoint. Dr. R. E. Ferrell, Jr., Springfield, discussed the subject from the surgical aspect.

About forty members and guests attended the meeting.

L. L. COOPER, M.D., Secretary.

WOMAN'S AUXILIARY

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

11th Annual Meeting, Milwaukee, 1933

President, Mrs. James F. Percy, Los Angeles, Calif.

President Elect, Mrs. James Blake, Hopkins, Minnesota.

WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION

9th Annual Meeting, Kansas City, 1933

President, Mrs. David S. Long, Harrisonville.

President-Elect, Mrs. Hudson Talbott, St. Louis.

ORGANIZED COUNTIES AND PRESIDENTS

COUNTY	PRESIDENT AND ADDRESS
Boone.....	Mrs. C. M. Sneed, Columbia
Buchanan.....	Mrs. C. H. Werner, St. Joseph
Cass.....	Mrs. H. A. Brierly, Peculiar
Cape Girardeau.....	Mrs. W. W. Ford, Gordonville
Clay.....	Mrs. H. J. Clark, Excelsior Springs
Cole.....	Mrs. James T. Leslie, Jefferson City
Gentry.....	Mrs. W. S. Campbell, Albany
Greene.....	Mrs. W. C. Cheek, Springfield
Jackson.....	Mrs. Wilbur A. Baker, Kansas City
Jasper.....	Mrs. Ulysses G. Hoshaw, Joplin
Johnson.....	Mrs. William R. Patterson, Warrensburg
Lafayette.....	Mrs. Odus Liston, Oak Grove
Linn.....	Mrs. Ola Putman, Marceline
Livingston.....	Mrs. Reuben Barney, Chillicothe
Miller.....	Mrs. G. D. Walker, Eldon
Randolph-Macon.....	Mrs. P. C. Davis, Moberly
St. Louis City.....	Mrs. A. G. Wichman, St. Louis
Saline.....	Mrs. L. S. James, Blackburn
Vernon-Cedar.....	Mrs. T. B. Todd, Nevada
26th District.....	Mrs. W. H. Breuer, St. James

WOMAN'S AUXILIARY, MISSOURI STATE MEDICAL ASSOCIATION—NINTH ANNUAL MEETING

Kansas City, May 2,3, 1933—Preliminary Program
Hotel President, May 2, 1933

9:00 a. m. Registration.

10:00 a. m. Meeting of Executive Board, Hotel President. Mrs. W. H. Goodson, Vice President, presiding.

1:00 p. m. Complimentary Luncheon and Musical Honoring Past Presidents. Hostesses, Members of the Jackson County Auxiliary. Mrs. W. H. Goodson and Mrs. Wilbur A. Baker, presiding.

6:00 p. m. Informal dinner, Hotel President.

8:00 p. m. Open meeting of the Missouri State Medical Association.

Wednesday, May 3, 1933

9:00 a. m. General Meeting, Hotel Muehlebach, Mrs. David S. Long, presiding.

Invocation, Mrs. M. P. Overholser.

Greetings, Mrs. Wilbur A. Baker, President Jackson County Auxiliary.

Response, Mrs. Mazzyck P. Ravenel, Columbia.

Reading of Minutes.

Announcement of Committees.

In Memoriam, Mrs. W. H. Goodson.

Reports of State Officers.

Reports of State Chairmen.

Report of Revisions Committee.

Roll Call of Counties.

Report of Credential Committee.

Report of Nominating Committee.

Election of Officers.

Report of Courtesy Committee.

12:30 p. m. Luncheon. Hotel Muehlebach, Mrs. David S. Long, presiding.

Invocation, Mrs. A. W. McAlester.

Introduction of Distinguished Guests.

Address, Dr. Estella Ford Warner, United States Public Health Service, Washington, D. C.

Introduction of New Officers.

Adjournment.

3:00 p. m. New Executive Board Meeting. Hotel Muehlebach, Mrs. Hudson Talbott, presiding.

6:00 p. m. Dinner. Kansas City Club, Mrs. Hudson Talbott, presiding.

THE ESSAY CONTEST

One of the avowed reasons for the existence of a Woman's Auxiliary is "the education of the laity." For many years the chief method used for the furtherance of this aim has been the promotion of *Hygeia*. It has proved its worth and has done much to interest the laity in matters of health. Another method has been the appointment of auxiliary members on health committees in various lay organizations. This safeguards the health programs of lay organizations and keeps them in the path of reputable medical practice. We have learned, however, that when "educating the laity" means the adult laity the process is indeed slow and not always encouraging. We have tried to keep before us the widely quoted statement of Mrs. George H. Hoxie, "We must first educate ourselves before we can hope to educate the laity."

"The Prevention and Cure of Tuberculosis" was a timely subject for the essay contest. Statistics show that following a depression the health rate of children is much lowered due to the lack of proper food and home environment and thus tuberculosis begins a fresh attack upon the human race. It was felt that this educational work would be helpful to the students while at the same time through the necessary reading they would be getting a consciousness of the status and prestige of the reputable medical profession and its contribution to the development of medical science.

This anticipation has been realized. Practically every essay begins with a history of the discovery of the tubercle bacillus and the various steps taken to combat the disease and appreciation of the researches to save humanity from the ravages of this disease.

Eleven counties report that approximately 450 students have entered the contests. Prizes have been given by the local units to the first and second places in each group. Buchanan County plans to have the winning essays broadcasted. The state prize has not been announced.

I want to pay tribute to the state chairman, Mrs. Hudson Talbott, who has worked so enthusiastically and persistently. I also want to thank the committees in the local units who have spent hours in grading the essays and helping the students in many ways. The Missouri Tuberculosis Association deserves our appreciation for furnishing leaflets and material to the schools and school teachers, and the county superintendents who invited our members to speak at the county teachers' conventions last August and gave them opportunity to present the plan to the teachers deserve thanks. In several counties the county nurses rendered valuable service in many ways.

The Woman's Auxiliary has cast "bread upon the waters." We believe that after many days it will return to us and that the time will come in Missouri when in every small town and hamlet an intelligent laity will know the difference between a medical quack and a trained reputable medical doctor.

B. H. L.

BOOK REVIEWS

PRINCIPLES OF CHEMISTRY. An Introductory Text-book of Inorganic, Organic and Physiological Chemistry for Nurses and Students of Home Economics and Applied Chemistry. With laboratory experiments by Joseph H. Roe, Ph.D., Professor of Biochemistry, George Washington University Medical School, etc. Third edition. St. Louis: The C. V. Mosby Company. 1932. Price \$2.50.

This book is primarily intended for use in teaching chemistry in courses for nurses. A resumé of inorganic and organic chemistry is given, which is quite satisfactory as a review of previous chemical training preparatory to a discussion of the elements of biochemistry. The book could be used as a text for some courses in biochemistry for home economics but is somewhat too elementary for the majority of cases.

D. B. C.

PHYSICAL THERAPEUTIC TECHNIC. By Frank Butler Granger, A.B., M.D., Late Physician-in-Chief, Department of Physical Therapy, Boston City Hospital, etc. Second edition, revised. By William D. McFee, M.D., Visiting Physician, Department of Physical Therapy, Boston City Hospital, etc. Philadelphia and London: W. B. Saunders Company. 1932. Price \$6.50.

This book should be of practical value to physicians and surgeons. The subject is discussed from a practical standpoint. The technic in the use of the various physical agents is described briefly but completely and the many photographs aid in a better understanding of the procedure. The chapter on diathermy is particularly well illustrated. An index of diseases is a very useful reference. This book is well written with intelligent chapter divisions and complex index.

It is noteworthy that the author does not exaggerate the claims for physical agents in treatment. He frequently mentions that these agents are valuable adjuncts in the management and treatment of the patient.

P. C. S.

THE TECHNIQUE OF THE NON-PADDED PLASTER CAST. By Fritz Schnek, M.D., First Assistant at the Accident Insurance Hospital in Vienna. With a preface by Lorenz Böhler, M.D., Director of the Accident Insurance Hospital in Vienna. Authorized English translation by Douglas D. Toffelmier, M.D., Oakland, California, member of the Orthopedic Staff of the Mevitt Hospital. 169 illustrations. Vienna: Wilhelm Maudrich. 1932.

In the foreword the author says the plaster technic described is that followed by Boehler in his treatment of fractures; also that his reason for writing the book was to give the detailed description necessary to make plain his methods even at the expense of repetition. The making of plaster bandages, the material used, the way in which they are applied, are quite thoroughly elucidated.

As a reference book for one more or less skilled in the use of plaster of paris the book is perhaps worth while but as a manual for one not so skilled it would tend to inspire a confidence not to be obtained except by judgment acquired through experience. Practically every type of cast or splint is described including those for fractures of the skull and jaws and for skin grafts.

C. A. S.

INDIVIDUALITY OF THE BLOOD IN BIOLOGY AND IN CLINICAL AND FORENSIC MEDICINE. By Professor Leone Lattes, Director of the Institute of Forensic Medicine in the University of Modena. Translated by L. W. Howard Bertie, M.A., B.M., B.Ch. (Oxon.). From the French edition of 1929, thoroughly revised and brought up-to-date by the author. Oxford University Press, American Branch, 114 Fifth Avenue, New York. 1932. Price \$7.50.

This is a most informative book intended for those students of medicine or any of its allied fields who have a fair knowledge of the fundamental principles of serology and of genetics. The author has gone into considerable detail regarding the serological nature and the biological inheritance of human blood groups. He has very thoroughly but concisely shown the applications of these principles to clinical medicine as well as to those medicolegal disputes usually involving questionable paternity or identification of blood stains. There is a very interesting section on the racial distribution of blood groups.

The large amount of information contained here and a very extensive bibliography make this a valuable volume.

C. F. B.

LABORATORY SERVICE AND THE GENERAL PRACTITIONER. An Interpretation of Pathological Aids to Diagnosis. By Arnold Renshaw, M.D., B.S. (Lond.), D.P.H. (Manc. and Camb.) Director of the Laboratory of Applied Pathology and Preventive Medicine, Manchester; Hon. Pathologist, Ancoats Hospital, Manchester; Bacteriologist, Manchester Royal Eye Hospital; formerly Lecturer in Pathology, Manchester University; Temp. Capt. R.A.M.C. (Specialist in Pathology, B.E.F., France); Registrar, Christie Hospital, Manchester; Pathologist, Manchester and Salford Hospital for Disease of the Skin, with an Introduction by Dan McKenzie, M.D. (Glas.), F.R.C.S.E. Oxford University Press, American Branch, 114 Fifth Avenue, New York. 1932. Price \$2.50.

This handy volume succeeds well in its effort to give the practitioner and the consultant an interpretation of laboratory findings and their application to clinical practice. The whole field is adequately covered, the material well arranged and ably indexed. The chapter on spectroscopy presents much new material not readily available in American texts.

A minor fault is that a number of the author's expressions, for instance "a well-sterilized bottle," and "without any pancreatic deficiency at all," look queer, and one finds himself trying to catch the difference between a sterile bottle and a well-sterilized one.

C. D. H.

PREVENTIVE MEDICINE. By Mark F. Boyd, M.D., M.S., C.P.H., Member of Regular Field Staff, International Health Division of the Rockefeller Foundation etc. Fourth edition, reset. Philadelphia and London: W. B. Saunders Company. 1932. Price \$4.50.

This, the fourth edition of Boyd's "Preventive Medicine" has been revised, reprinted and brought up-to-date in every particular. Any book that has reached a fourth edition must have unusual merit and fill a waiting need. Although condensed it is clearly, concisely and attractively written. Every chapter has been read with a searching eye for lapses in knowledge or flaws in the text to pounce upon but nothing of moment has been found to criticize ad-

versely. An attractive feature for the student is that at the end of each chapter there is a list of the books, pamphlets and references utilized by the author in preparation of the text and it is gratifying to note the number of United States Government publications and American Public Health Association reports that are included in the list. It is well illustrated with photographs, maps and charts which add much to the teaching value of the book, and it has a good index. The book is a valuable contribution to the art of preventive medicine and can be highly recommended, not only to students and practitioners for whom it was written, but to specialists as well.

A. R.

FUNCTIONAL DISTURBANCES OF THE HEART. By Harlow Brooks, M.D., Attending Physician, Fourth Medical Service, Bellevue Hospital, etc. (One of the Everyday Practice Series, Edited by Harlow Brooks) Philadelphia and London: J. B. Lippincott Company. Price \$5.00.

The object of this book is to call attention to physiological disturbances of the heart independent of any demonstrable anatomical lesion. The effects on the heart of such emotions as grief, fear, love and sexual abstinence are particularly stressed. There is a chapter on anxiety angina and one on cardiac neurosis. The chapter on neurocirculatory asthenia is exhaustive and interesting. The chapter on paroxysmal tachycardia is not very stimulating. In the treatment of attacks, the author says that quinidine is no more "specifically useful than digitalis or caffeine," and reports one patient dying in an attack. The author says he is not a cardiologist and merely gives his own impressions without reference to the literature. The general practitioner will find the book interesting reading and may glean from it a few practical points.

P. T. B.

MICROBIOLOGY AND ELEMENTARY PATHOLOGY. For the Use of Nurses. By Charles G. Sinclair, B.S., M.D., Major, Medical Corps, U. S. Army, Instructor in Bacteriology, Army Medical School, etc. With 102 illustrations, some in colors. Philadelphia: F. A. Davis Company. 1931. Price \$2.50.

This book is divided into three parts; namely, microbiology, laboratory exercises in microbiology and elementary pathology. After an introduction and a historical outline with suitable definitions and a story of the development of bacteriology the author writes on distribution, activities, general characteristics, methods of study and agents to destroy bacteria. There is a short chapter on immunity and resistance to infection, and a discussion of various pathogenic microorganisms. Two chapters are devoted to virus diseases, Rickettsia, and the bacteriophage, with a very brief consideration of some practical aspects of immunity containing valuable information for the nurse. The colored pictures of the Shick and Dick tests are excellent, there is a good educational discussion of immensely practical value on vaccines, immune sera, toxins, and antitoxins, how they are prepared and what they have done for civilization.

The third part of the book is quite inferior to the first part. The usual form pursued by the League of Nursing Education is followed but the chapters are dull and laborious reading, even though very brief and incomplete.

The chapter on animal parasites is too long and the chapter on tumors would give a nurse a very pathetic understanding of this great subject.

The book is exceedingly top-heavy, stressing bacteriology but giving little attention to disease as it might be understood and retained by the nurse.

F. C. H.

THE USE OF LIPIODOL IN DIAGNOSIS AND TREATMENT. A Clinical and Radiological Survey. By J. A. Sicard, Late Professor in the Faculty of Medicine, Paris, and Physician at the Necker Hospital, and J. Forestier (Aix-Les-Bains). Oxford University Press, American Branch, 114 Fifth Avenue, New York. 1932. Price \$4.00.

Lipiodol composition, physiology, its elimination, general technic, radiological technic, indications for its use and contraindications are well explained.

It is often said that lipiodol is not absorbed but the reviewer wishes to state that this is a mistake. The reviewer has seen lipiodol in lessened quantities still present at the end of four years. The least active in ability to absorb is the subarachnoid cavity; the most active is the blood stream. One feature to be kept in mind is that in tumors in the spinal canal not large enough to cause obstruction, a special technic must be thought of.

In bronchopulmonary cavities or in any abnormal condition of the lungs, the postural drainage of the side to be examined should be exercised previous to the injection.

Injections in the female and male generative systems show the explorations which are made.

Lipiodol therapy is given in the last chapter of the book. The reviewer is not much impressed by this chapter.

The volume is well illustrated and is a strong plea for the use of lipiodol.

E. H. K.

SKIN DISEASES AND NUTRITION INCLUDING THE DERMATOSES OF CHILDREN. By Erich Urbach, M.D., Dozent in Dermatology at the University of Vienna, First Assistant to Prof. W. Kerl at the University Clinic for Skin and Venereal Diseases in Vienna. Authorized English translation by Frederick Rehm Schmidt, A.B., M.D., Attending Dermatologist and Syphilologist, Alexian Brothers Hospital, etc. With 55 illustrations, 8 diagrams and 10 tables. Vienna. Wilhelm Maudrich. 1932.

Urbach strikes the keynote of dermatologic dietotherapy when he states in his introduction: "Though it is wrong to accord to diet the highest place in the hierarchy of successful therapeutic measures, it is safe to say that it often is the most powerful adjunct to treatment." The author has written a book long awaited by the world; a masterful exposition of his own opinions and a critical review of the literature. Such important diseases as food allergic eczema, infantile eczema, diabetic eczema and pellagra naturally receive the most attention. Regarding intracutaneous food tests Urbach says, "they are worse than useless, yes misleading, to draw definite conclusions from the outcome of their reaction."

He has given to medicine his propeptone treatment for specific oral protein desensitization. He believes the Gerson and Sauerbruch diets are useful for cutaneous tuberculosis. Charts showing analyses of various groups of foods and their caloric value complete the excellent arrangement of the subject matter.

The book fills a very definite niche in the treatment of skin disorders and nothing but praise is due the author who is internationally recognized as a scientist of the first rank.

N. T.

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E. J. GOODWIN, M.D., Editor
1023 Missouri Building, St. Louis, Mo.
Telephone, Jefferson 5261.

PUBLICATION } J. C. B. DAVIS, M.D., Chairman
COMMITTEE } G. WILSE ROBINSON, M.D.
M. A. BLISS, M.D.

CARDIAC CARE OTHER THAN REST AND DIGITALIS

GRAHAM ASHER, M.D.

KANSAS CITY, MO.

The knowledge to use digitalis and rest correctly in cardiac therapy is difficult to acquire but valuable to every physician. So thorough has been the training of medical students for years in these measures that cardiac consultants now say they seldom see a patient with congestive failure who has not previously been correctly digitalized and put to rest. Digitalis is such a useful drug that there is danger of it becoming a routine in the treatment of diseases of the circulation and time be lost in its trial before the indications for other drugs and physical measures are recognized. The contributions of internists to cardiac therapy have been more and more the employment of knowledge of cardiac physiology and means to restore normal physiologic function. I wish to emphasize the value of these physiological means for cardiac care, not only as adjuncts but as preferable alternative methods of election,

and to urge that they be fully considered before resorting to digitalis and rest.

Before the individual cardiac care is ordered it is advisable to consider carefully whether all the known physiological requirements of the heart are being supplied. These requirements are, stated simply: Adequate supply of blood both as regards blood volume and hemoglobin for gaseous exchange; optimum glucose, oxygen, protein and mineral salts; a body free from infectious, toxic and fatigue products; an optimum production of thyroid secretion; freedom from external pressure on the heart and great vessels; predominance of the sinus node in impulse formation at optimum rates, and a properly maintained peripheral circulation. To permit a single one of these factors to remain deranged is to meet relative or absolute failure in spite of diligent conventional cardiac care.

Working charts or simple outlines which recall the common therapeutic measures are shown in charts 1 and 2. Chart 1 lists the common

DRUG	CONDITION	DRUG
Diuretics	Congestive failure	Hydragogue Cathartics
Mercurial		
Urea		
Purine		
Nitrites	Hypertension	Sedatives
Iodine	Hyperthyroidism	
Thyroid extract	Hypothyroidism	Thyroxin
Adrenalin	Peripheral vasodilation	Pituitrin
	Acute loss of blood volume	Ephedrine Barium chloride Antitoxic (if acute diphtheritic)
	Asthma (to differentiate from heart disease)	
	Heart block	
Alcohol	Peripheral vasoconstriction	Acetylcholine
Purine vasodilators		
Morphine	Angina pectoris	Nitroglycerin
	Paroxysmal dyspnea	Atropine
	Coronary thrombosis	Caff. Sed. Benz. (in collapse state)
Quinidine	Auricular fibrillation	Strophanthin Ouabain (emergency)
	Auricular flutter	
	Auricular tachycardia	
	Ventricular tachycardia	
Iron	Anemia	Liver extract Extralin Ventriculin
Copper		

Chart 1

METHOD	CONDITION	METHOD
Cardiac diet (high CHO, low salt) Restrict fluids	Congestive failure	Minerals adequate Massage Venisection Southey tubes
Oxygen	Coronary thrombosis	Transfusion
	Anoxemia	
	Anemia (acute)	
Glucose	Paroxysmal dyspnea	Venisection or tourniquet to limbs Hypodermoclysis or infusion
	Acute loss of blood volume	
	Hypoglycemia	
Massage and exercise	Heart block (acute toxic or diphtheritic)	External heat (if in shock)
	Acute toxic myocarditis	
	Effort syndrome	
Reducing diet	Heart in obesity	See congestive failure above Psychotherapy
	Hypertension	
	Peripheral vasoconstriction	
Sedative baths Sedative massage	Sinus tachycardia	Cool precordium
	Acute pericarditis	
	Peripheral vasodilation	
Stimulating massage	Pericardial effusion	Cold rubs or packs Pneumopericardium
	Pleural effusion	
	Aecities	
Paracentesis	Hyperthyroidism	Radium X-Ray
	Intrathoracic obstruction	
	Pericardial scars	
Surgery	Infections (with circula- tory effects)	Climatotherapy Vaccine & physiotherapy Vagal pressure
	Auricular tachycardia	
	Ventricular tachycardia	
Removal food of infection	Auricular and ventricular extrasystoles	Desensitization to specific allergens
Withdraw toxic materials		

Chart 2

drugs and their indications and chart 2 lists the physical means to restore normal physiology. Antisyphilitic drugs and salicylates in rheumatic fever are omitted and the discussions of quinine and morphine are incomplete for the sake of brevity.

The need for an adequate supply of blood both as regarding formed elements and blood volume is taught in elementary physiology, yet not infrequently the consultant is called to help support the circulation of a patient with evidence of a marked diminution of blood volume due either to decreased intake of fluids or loss of blood through bleeding or of serum following severe burns or bullous dermatitis. The feeble, rapid, or irregular pulse, dyspnea and weakness have usually previously been treated by rest and digitalis, the latter generally given hypodermically and in amounts too small for digitalization, or in amounts that further endanger the patient by inducing digitalis poisoning. It would be well for our overzealous confreres to remember that digitalis administered thusly cannot be taken away from the body except by the slow process of natural elimination. The vomiting reflex which is the "safety valve" of mouth administration is ineffective here. For example, a woman 53 years old had been subjected to lobectomy for toxic adenoma of the thyroid and two days later showed vomiting of all fluids by mouth, vasomotor collapse with rapid, feeble pulse and clammy perspiration, inability to retain fluids by rectal drip, all apparently due to postoperative thyroid crisis. She was seen at the end of the third day markedly weaker, pulse not improved, temperature 100.4 and her chart showed oliguria. Treatment in the interim had consisted of continuance of the rectal drip with the absorption of a small unknown quantity due to lack of retention, and digifoline 1 c.c. hypodermically every four hours. Discontinuance of the digitalis and 500 c.c. of normal saline and 500 c.c. of 5 per cent glucose intravenously produced a marked amelioration of all symptoms in 8 hours and a normal convalescence thereafter.

Not infrequently the significance to the circulation of an anemia has been overlooked and the fundamental principle disregarded, that adequate hemoglobin must be present for gaseous exchange. It is very gratifying to the patient, after many visits to the office or dispensary for observation of the heart, taking digitalis for long periods of time and undergoing long periods of rest at great economic loss, to be "cured of heart disease" by bringing the hemoglobin up to adequate amounts through the administration of iron or liver extract. Acute anoxemia due to lack of hemoglobin is best met with transfusion. In these patients such certain

symptoms of heart disease as shortness of breath and systolic murmurs disappear and functional classification is raised to normal.

Awareness of the importance of optimum blood sugar at times of stress on the circulation is of equal importance with knowing the indications of medication. The treatment of cardiac emergencies where insufficient glucose is present is one of the most spectacular demonstrations in medicine, as brought out by Marvin.¹ The effects of hyperglycemia on the circulation are not so varied nor so well understood. But the fundamental fact that the heart is the most active muscle tissue in the body and that it must have sufficient glucose, oxygen and mineral salts constantly bathing the fibers is often lost sight of. When arteriosclerosis is present the cardiac musculature is apparently more sensitive to decreased blood sugar and it is quite important to bear in mind that in these cases either diets low in carbohydrates or insulin used to the point of producing normal blood sugar for normal individuals, will produce evidence of myocardial insufficiency and anginal pains. Persistence in the induction of low blood sugar is undoubtedly responsible for some of the cardiac accidents seen during the course of apparently successful desugarizations. Marvelous results from the intravenous administration of high concentrations of glucose have been obtained in paroxysmal dyspnea, in acute toxic myocarditis such as diphtheritic or drug intoxications, during the collapse and decompensation stages of coronary thrombosis and during the circulatory collapse due to overexertion or overexposure.

Similarly, withdrawal of adequate protein maintenance results in diminished cardiac function. Whenever the protein requirements of the body are not supplied in the diet for a considerable period of time circulatory efficiency has been injured to a certain extent, real though not measurable. During the present economic distress the general medical clinics are visited by increasing numbers of patients showing symptoms of circulatory deficiency, as, dependent edema, pallor, shortness of breath, palpitation of the heart, weakness and vertigo. Often the closest confidential history will bring out the dietetic deficiency, which is, usually, a lack of maintenance proteins and vitamins and where eventually the cure is dietetic. The beriberi heart is an extreme example of vitamin deficiency. The reduction of obesity means less work for the myocardium and removes a central impediment to the heart and a peripheral impediment to the capillaries and veins. In chronic myocardial insufficiency, the congestive failure may be greatly benefited by the high carbohydrate, low salt diet, such as outlined by Smith.²

The extent to which the profession is pre-

paring itself for the use of oxygen in the treatment of myocardial insufficiency is shown in the prominence given the subject during the recent New York Postgraduate Fortnightly Assembly and in the increased distribution of oxygen and apparatus for administering it. The profession has now become aware of the fact that commercial welding oxygen and control valves, available in every community, and the bag, tube and mask of the small anesthetic machine are adequate for the administration of oxygen. Using this apparatus oxygen can be quickly made available, is safe and is economical for long administration, and can be given in adequate concentration, which is that amount which will relieve the anoxemia. Children do better in oxygen tents or chambers. The remarkable drop of pulse rate and temperature, and relief from restlessness are sufficient to prove it a heart conserving measure second to none wherever indicated. This subject is well discussed in an article by Evans³ of Buffalo. The indications are: To rest the circulation after gas poisonings, particularly carbon monoxide; hemoglobin deficiencies; cyanosis where it is estimated that anoxemia is damaging the myocardium, such as in pneumonia or massive collapse of the lung, and during the collapse and decompensated stages of coronary thrombosis.

The subject of the optimum concentration of mineral salts has been inadequately though diligently studied and from this phase it is very likely that great advances will come in the future in the treatment of myocardial failure where clinically a study of the previously considered factors had shown no error and at autopsy no gross or microscopic changes in the myocardium were seen. Defects in the potassium salts have been carefully studied by Harrison⁴ and his co-workers. These men also brought out lately that the increase in the size of muscle fiber and resultant alteration of the circulatory bed in the heart muscle may be responsible for inadequate exchange of mineral salts and excretory products in the interior of the fibers.⁵

The marked effects on the blood pressure of continued withdrawal of mineral salts from the diet frequently mean that adequate minerals to maintain muscle contraction are not being supplied. Particular attention should be given to the potassium, magnesium and calcium salts. Our former ideas of the toxicity of potassium salts apparently should be revised.

One does not need to be an enthusiastic convert to the theory of focal infection to recognize the axiom that the circulation is spared when the body is freed of infectious, toxic and fatigue products. Aside from the possible specific deleterious effect of infections, the acceleration of the circulation produced is reason enough to call

for the greatest diligence in the search for their presence and to anticipate greater benefit from their removal than from the administration of digitalis. It is a common observation that the eradication of severe infection both improves myocardial function and decreases the frequency of paroxysmal irregularities. The need for caution in advising these procedures comes mostly from the danger of causing recurrence of rheumatic fever or the danger of transplanting the organisms of subacute bacterial endocarditis on a preexisting cardiac lesion. The frequency with which the removal of chronically infected gallbladder with stones effects an improvement of myocardial function is reason enough for the closest cooperation of the internist and the surgeon in the recognition and treatment of this condition. Often where it is considered that the patients are being put in jeopardy by the operation, the results prove eventually that the only satisfactory means of cardiac therapy has been used.

It should be unnecessary to point out the lack of value of digitalis in circulatory disturbances caused by toxic agents, such as poison alcohol and poison jamaica ginger, even though disturbance of myocardial function is present, as shown by the electrocardiogram. In this connection it should be recognized that there is an obligation to take frequent serial electrocardiograms of patients who are being given the utmost in rest and digitalis and who do not respond satisfactorily. The usual signs are increased conduction time, coupled beats, runs of extrasystoles, down deflections of the T waves, or the disclosure that a rapid ventricular rate has supervened. In the latter case the dangers of ventricular tachycardia and fibrillation or the establishment one to one flutter must be constantly guarded against and the measures of the withdrawal of the dose, supervision of elimination, a steady dose of morphine and the preparation for the emergency trial of quinidine and caffeine sodium benzoate instituted. Accumulated fluids in the serous cavities should be removed mechanically as they have been shown to have a high content of digitalis.

The recognition and correction of hypersecretion of the thyroid with its overdrive to the circulation and the consequent congestive failure is such a valuable advance in cardiac care that overlooking a chance to apply it always results in regrettable suffering and economic loss. Congestive failure, with or without fibrillation, resistant to digitalis and rest, proved to be due to thyroid hypersecretion and when submitted to thyroidectomy, afford us our most gratifying examples of cure from "heart disease." Auricular fibrillation, not proved to be due to mitral disease and resistant to rest and digitalis, frequently offers the same opportunity. As point-

ed out by Levine⁶: the history; an alert expression or manner of the patient; rapid, active heart tones, suggest the diagnosis even without the usual physical signs. In the recognition of this condition the finest clinical judgment must be used, as brought out by cases of "apathetic" hyperthyroidism described by Lahey⁷ and cases with normal basal metabolism as emphasized by Morris.⁸ Most of these cases show more improvement in functional capacity and lowered pulse rate from routine administration of Lugol's solution than from digitalis. Roentgen ray and radium should be reserved for those few cases where surgery is refused or the condition extremely poor. Rest in bed is only a part of the therapy of this condition, the therapeutic test of iodine and thyroidectomy often effecting a cure in cases where this seems a heroic measure.

Hyposecretion with the dilated and flabby heart muscle of the myxedema heart is equally a challenge both as to difficulty in diagnosis and the therapy. The configuration of the heart and the coincident signs of myxedema are the greater value in recognizing and correcting the pathological physiology than the basal metabolism. Experience has proved that in many cases the basal metabolism cannot be brought up to normal with thyroid feedings without producing tachycardia and anginal pains, or other evidence of overdrive of the circulation. The correct administration of thyroid extract or thyroxin requires a great deal of skill and patience; and, again, there is no substitute for the correct employment of this measure.

Mechanical means to free the heart and great vessels from external pressure have given marked relief in congestive failure where the indications and operative measures have been correctly applied. The decompression of the pericardium or the relief of intrapericardial and extrapericardial adhesions, such as the Brauer and Delorme operations, has brought back to compensation many cases in the hands of many operators and is no longer a measure to be reserved to special clinics. Removal of intrathoracic goiters and decompressions of the sternum in mediastinal tumors and aneurysms may be the indicated therapy of certain cases of dyspnea and venous congestion. Thoracentesis and abdominal paracentesis are all too frequently reserved till after digitalization has proved ineffective, though it is a recognized fact that the heart is at a mechanical disadvantage in its attempt to clear up congestive failure while fluid is present in the chest; and that fluid in the abdomen interferes with diuresis through pressure on the renal veins. The removal of excessive pericardial effusion is occasionally unavoidable and a life-saving procedure. There

are probably few practitioners who cannot recall patients who had effusions whose clinical course would not have been bettered by early pericardial tapping. Our memory of these cases should be sufficiently strong to prompt us to look for the indications.

The use of quinidine, nerve sedatives, or vagal pressure in the control of cardiac irregularities is here mentioned only for emphasis since there are adequate discussions in the recent literature. During the stormy period of cardiac irregularities following cardiac infarction, the patient is apparently better protected by quinidine than digitalis. Vagal pressure is one of the simplest manipulations in medicine; knowledge of its use should be widespread. Ocular pressure should be reserved for a few cases, and used only after vagal pressure has been thoroughly tried. Indications for the use of vagal pressure may be seen on the accompanying chart. An example of its utility is in a case seen in a physician's office where a case of tachycardia, rate 186 and of two hours' duration, was about to be treated with an heroic dose of digitalis intravenously when examination assured us that it was of auricular origin; about three seconds of right vagal pressure brought it to an immediate stop, followed by normal sinus rhythm.

Of the use of diuretics in congestive failure much has been written and demonstrated at cardiac clinics. Why they are not more frequently and aptly applied in the routine care of congestive failure is not explained. The purine diuretics are often sufficiently powerful to clear pulmonary and dependent edema and the favorable side effects outweigh the unfavorable. Merbaphen and salyrgan of the mercurial diuretics are widely distributed and deserve trial.

Barium chloride, adrenalin and ephedrine are relieving many cases of heart block and Stokes-Adams disease. For diagnosis as to type and as to the state of the myocardium and with any therapy these cases should be followed carefully with electrocardiograms. Stokes-Adams disease is a condition where digitalis is strongly contraindicated.

Ephedrine should be tried in dyspnea due to asthma where wheezing is noted and musical rales heard. Not infrequently these patients have been taking digitalis for years with indifferent results under the impression that they have "cardiac asthma" and they marvel at the results obtained by ephedrine.⁹

To maintain the peripheral circulation properly many factors must be watched. There must be sufficient blood volume, as previously pointed out. Vascular and capillary constriction and dilatation must be avoided by insuring optimum skin temperatures during emergencies and at all times in the very reactive individuals.

As Lewis¹⁰ has pointed out, the vascular reaction to cold came at 10° to 22° and may be avoided by higher temperature. Excessive vasoconstriction is relieved by heat, gentle massage, acetylcholine, caffeine and the purine vasodilators and alcoholic stimulants. The induction of excessive perspiration is not only an extra load to the myocardium but is apt to deplete the peripheral circulation and is of greater danger where compensatory polycythemia is present. In many patients alcohol produces excessive dilation of the skin capillaries. In the ptotic type of individual with poor vessel tone, overfilling of the splanchnic area at the expense of the peripheral circulation can be avoided by easily digested meals and elastic support of the lower abdomen, resulting in raising the functional classification, often after drug therapy has failed. Excessive dilatation of the capillaries and stagnation of blood in them may be recognized by the cyanosis or flush of the skin, resembling the histamine flush. Ice rubs, massage or giving adrenalin or pituitrin (s) $-\frac{1}{2}$ to 1 c.c. will restore the capillary tone. These drugs act directly on the capillary and vessel walls. In children adrenalin is the stimulant of choice in acute collapse of the circulation, restoring tone to the peripheral system and stimulating the myocardium.

Massage and exercise are two measures of great value little used in cardiac therapy because they are not sufficiently well taught to physicians, that trained assistance is not often available, and the skillful prescription for each individual case cannot therefore be easily made. It is far easier to prescribe more rest and more digitalis and abide by the results, again overlooking a means to improve physiological function. An active circulation through the muscle tissue is essential to efficient metabolism and with less cardiac strain, as brought out by Bock and Dill.¹¹ The graduated exercises start at such a low expenditure of energy that they can be instituted at the first sign of increasing compensation. It is obvious that the spa, baths and apparatus treatments are superfluous. No special system is recommended since it is proved that a very little observation of the doctor and nurse as to dyspnea, fatigue and pulse will permit graduate exercises to be ordered, suited to each individual case.

In addition to improving capillary tone and to inducing rest and even cardiac sedation by pericardial effleurage, massage can be used early as a substitute for exercise, with little strain on the circulation and as an aid to promote resorption of peripheral venous and lymphatic congestion and thus aid diuresis. Invoking this aid to a physiological process in no way brands the user as leaning to the cult of the massage fadists.

Venesection for congestion of the heart chambers or the pulmonary vessels, and in hypertension and polycythemia, has been even more clearly emphasized in the recent advances in cardiac therapy by physiological means. The temporary effects of lessening the central venous congestion by stopping the venous return by blood pressure cuffs or tourniquets on all four extremities has proved one of the best ways to relieve paroxysmal dyspnea, being followed by venesection and hypertonic glucose intravenously, if necessary.

The frequent relief of cardiac symptoms and irregularity due to distention and bowel distress by carminatives and enemata is noted here only for emphasis of the time-tried value of these measures.

In resumé, I wish to urge wider consideration of the recent advances in cardiac therapeutics based upon the correction of deranged physiological function. The simplified charts and short discussion have been presented to crystallize the reader's idea of the subject. No attempt has been made to introduce original work and relatively untried methods, and due credit must be given to the research upon which these facts are founded. Predictions of the future increased importance of glucose, oxygen and mineral salts are made. Since correct cardiac therapy depends upon supplying the physiologic needs these needs should first be studied and use of digitalis should be strictly reserved to those cases where its indications are clear and its administration will yield a high percentage of successful results.

820 Professional Building.

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TRANSURETHRAL PROSTATIC RESECTION IN RETROSPECT

CLINTON K. SMITH, M.D.

KANSAS CITY, MO.

Transurethral resection of the prostate, like other revolutionary propositions, must needs pass through a period of "growing pains." Not within the memory of the writer has any surgical innovation met with such widespread enthusiasm, probably because of the long smoldering hope for some plan of practical application to circumvent the dreaded operation of prostatectomy.

In the writer's opinion, a point has now been reached where the momentum of this enthusiasm threatens to carry us beyond judicious optimism into an era of inflation which must inevitably react to the detriment of this meritorious procedure. It appears timely therefore, after the widespread use of the procedure during the last one to two years, that a consolidation of our position and the ground gained is in order.

The history of transurethral resection of the prostate is too well known to warrant a review in this discussion. Suffice to say that it resolves itself into the practical application of the cutting high frequency current to the original "punch" idea. In the following brief discussion the writer wishes to present his ideas and impressions gained from the use of the procedure in eighty-five cases during the last eighteen months.

First and last, it must be remembered that the personal equation is paramount, and that while certain standard guideposts may be set up, each operator must necessarily develop his own plan of case management and operative technic. A word of admonition to those contemplating this work, namely; acquire all theoretical information possible; set about putting it into practice cautiously; don't make too many rash promises.

The proposition may be approached in a consideration of two phases, technical equipment and case management. It is to be presumed, primarily, that the operator is an experienced cystoscopist and particularly familiar with the particular type of cystoscope through which the cutting equipment is to be used. Undeniably, prostatic resection is the acme of cystoscopic surgery.

TYPE OF EQUIPMENT

The equipment used by the writer and which has proven eminently satisfactory, is the Westinghouse Model F endotherm, for delivery of the cutting current, and the Stern-McCarthy visualized prostatic electrotome for the cutting modality.

CASE MANAGEMENT

In this phase, consideration is accorded the selection of type of case, preparation, operative technic and postoperative management.

Type of Case.—The question arises, can all types of prostatic enlargement be successfully resected? With few exceptions, the writer believes that all types of enlargement can be managed. This opinion is based upon an experience with an unselected series of sixty cases. The proposition must be viewed advisedly, however, and the personal equation with the operator and the particular personal factors pertinent to the patient, given due consideration. Obviously, the degree of enlargement adds to the technical difficulties of the operation but not necessarily to the mortality or morbidity hazard; this will be given attention presently. To elucidate; very large prostates, particularly of the lateral lobe type, add to the difficulties of operative technic. Here the proposition is largely, to what extent does the operator care to apply himself to master the operative management. Again, with most cases of this type, two or more sittings are required (or at least should be used) and whether or not this is practical in this particular case, must be considered.

The types best suited to resection are, in order, bars, small middle lobe enlargement and the so-called collar type of enlargement, with the lateral lobe enlargements following according to degree of enlargement. All carcinomas are well suited to resection and it is pretty well agreed that resection is the method of choice in these cases because the object is to give the patient the most comfort with the least disturbance.

The mortality hazard must be accorded a prominent part in considering the type of case. In our experience, the chief factors which occupy such a prominent place in prostatectomy do not operate as forcefully in resection. A very poor prospect for prostatectomy may be resected with comparative safety in so far as renal and cardiac function is concerned. In other words, the postoperative reaction in resection is slight as compared with prostatectomy. On the other hand, we do fear postoperative infection and sloughing of the prostatic area. Curiously enough, our mortality has been largely confined to apparently good risks in which infection occurred.

PREPARATION

While the operative hazard from the time honored standards for prostatectomy is much less, nothing is left undone in a careful preoperative study of the case.

Constant bladder drainage by retention catheter is carried out while studies of renal function, blood chemistry and cardiac function are made. Particular study and attention are given the condition of the prostate. It must be remembered that a large portion of the prostate is left in situ and, obviously, to embark on resection in the presence of a red hot infected prostate is an invitation for postoperative trouble. Furthermore, it must be remembered that some degree of chronic prostatitis prevails in most cases of enlargement.

The bladder is irrigated daily with acriflavine, 1-10,000, and hot rectal therapy with gentle prostatic massage judiciously carried out until the local condition of the gland is considered suitable for resection. Usually, this requires a period of from five to fifteen days. Here, it is well to repeat that rash promises concerning early operation sometimes lead to embarrassment; to correct a prostatic infection often requires considerable time.

Resection should never be done while the patient is running a so-called catheter temperature. Where it is at all practical, we prefer to treat the patient at the office by daily catheterization and bladder irrigation with periodical prostatic massage until good catheter tolerance is established, before entering the hospital. It is further our practice to do a bilateral vasectomy primarily in all cases as assurance against epididymitis.

OPERATIVE TECHNIC

Resection is one operation wherein everything depends upon a well organized plan of operative procedure. In other words, the operating room personnel must be familiar with the procedure and be prepared to carry out with dispatch the directions of the operator.

Presuming that the operator has provided himself with the modalities previously described, he should be equipped further with cystoscopes through which may be used flexible fulgurating electrodes to coagulate troublesome bleeding which cannot be readily reached through the resectoscope. Duplicate lights, cutting loops and fulgurating electrodes should be on the table. In addition, the writer always has a suprapubic cystotomy set up available in case of emergency with uncontrollable bleeding. This, we have never been called upon to use but its presence is quite comforting.

Before the patient is anesthetized, all lights, fulgurating electrodes and cutting loops should be tested. (After the indifferent electrode has

been placed under the patient, a piece of meat is placed upon the abdomen and the electrodes tested.) In our experience the desirable setting of the endotherm is, for cutting 8 and I, and for fulgurating 5 and R. When everything is in readiness the patient is given a light spinal anesthetic (50 to 75 milligrams of novacaine). As soon as anesthesia occurs the resectoscope is introduced and the irrigator (filled with distilled water) attached. After a careful survey of the prostatic geography, all is in readiness for resection of the obstruction.

Before resection is begun a definite plan of procedure should be formulated in the mind of the operator. To elucidate: Only experience can dictate as to what and how much to remove. Generally speaking, if the lower half of the bladder neck circle is cleared of obstruction to the extent that the bladder floor can be seen from the region of the verumontanum the functional results will be satisfactory. It should be decided at this time how much lateral enlargement is to be removed. This part should be attacked first as resection of the lateral lobes, including control of bleeding, presents fewer difficulties if attacked before the median portion is removed. When all is in readiness the cutting loop is placed against the distal point of the lateral lobe to be cut and as high up as has been decided to remove tissue; the switch is pressed down and the loop drawn forward toward the operator, pressed well into the tissues, while the operator counts slowly from one to seven. Care must be exercised in not cutting forward into the cut-off muscle (we have had two cases of troublesome incontinence) and the verumontanum is the best landmark to determine the extent of the cut. All bleeding should be controlled after each cut by switching to fulguration. Usually, this can be done through the cutting loop but other and more effective electrodes should be quickly brought into use if needed. Before each cut is begun, sufficient water is allowed to flow into the bladder to carry the walls well away from the prostate. Care should be used in not overdistending the bladder under spinal or other anesthesia. Too much emphasis cannot be placed on the importance of seeing clearly and recognizing clearly every portion of tissue to be cut before the cut is made.

A point which the writer feels is of utmost importance and which requires the exercise of unusual judgment is, how near the vesicoprostatic junction to begin the cut, particularly on the lateral lobes. It must be remembered that if this cut is made too near the bladder junction postoperative sloughing may readily extend through the bladder wall resulting in a septic pericystitis, a most serious complication.

After sufficient has been removed from each lateral lobe the lower or median portion of the

enlargement is attacked. This in our experience is the more important. Here, care must be used not to remove too much. A finger in the rectum gives valuable information. Cuts here should be stopped definitely at the verumontanum.

BLEEDING (OPERATIVE)

As mentioned, all bleeding should be controlled immediately. In our experience most bleeding has occurred, not while making the cut but when the cystoscope or loop wounds the edge of a previous cut. For this reason the less manipulation the better.

All pieces should be cut off and not pulled off, as this has also to do with bleeding. The pieces as a rule readily float out with the water as the electrode is withdrawn. Should a piece or two remain in the bladder no harm is done except the hazard of catheter stoppage.

After the cutting is completed it is our practice to run a line of light coagulation at the point of prostatic vesical junction as here is the greatest point of postoperative bleeding hazard. As a last word about bleeding: all bleeding must be controlled before the patient leaves the operating room. The return flow from bladder irrigation should be clear.

HOW MUCH TISSUE SHOULD BE REMOVED?

Every one must determine this for himself. In our experience five to thirty good pieces removed at one sitting are usually sufficient. Four cases have required the second sitting. This should not be repeated till the patient has well recovered from the first. Better another sitting than a leaky bladder. Better, also, another sitting if bleeding control absorbs too much operative time than too much shock for the patient. Every patient should be told that more than one sitting may be required and that there is always a possibility of a cystotomy.

POSTOPERATIVE CARE

Postoperative catheter vigilance is the price of freedom from postoperative complications. A 28 F catheter of the open end type is inserted upon removal of the resectoscope. In almost every case, even though drainage be perfectly clear upon leaving the operating room, slight persistent oozing occurs. This is of no importance if in moderation, but constant watch must be maintained to insure perfect and constant drainage. A few hours with a plugged catheter may produce profuse bleeding. Frequent irrigations with 1:1000 picric acid solution are used until the drainage becomes clear. The catheter may be removed after forty-eight to seventy-two hours, provided there is no bleeding or fever. In most instances the patient is able to void. However, in some cases catheteri-

zation once or twice daily is required for several days or weeks. One should not be discouraged on this account. Several of our patients have come through with good functional results after remaining on the catheter for several weeks following resection. It is our practice, no matter how well the patient voids, to pass a catheter once daily for at least one week following the removal of the retention catheter, making an instillation into the bladder of 30 to 60 c.c. of 1:10,000 acriflavine.

POSTOPERATIVE INFECTION

This we fear more than any other potential hazard. The presence of the remaining portion of the prostate (which is usually involved in some degree of infection), together with the closed bladder is a hazard that must be accepted. The catheter should never be removed until the temperature is normal. Usually, a postoperative temperature of from 1 to 3 degrees prevails during the first twenty-four to seventy-two hours. The best insurance against infection, we feel, is good preoperative preparation and free postoperative catheter drainage with frequent antiseptic bladder irrigations. Should indications of sepsis persist or increase, cystotomy may be necessary. In one of our cases when cystotomy was necessary, apparently a trophic sloughing of the mucosa extending about one half inch and entirely surrounding the bladder neck, had occurred. Cystotomy was followed by immediate improvement with uneventful convalescence.

DELAYED BLEEDING

The patient may be allowed to leave the hospital a few days after the catheter is removed but should be warned to report any bleeding immediately. Several instances of bleeding have been reported occurring from one to three weeks after operation. Obviously, immediate control by fulguration or cystotomy is imperative. Fortunately, in our series we have not encountered this complication.

VOIDING

Usually the patient voids with relatively little difficulty but with frequency and considerable discomfort. A gradual improvement within a few days to a few weeks is the rule.

It must be remembered that a prostate still remains and while in most cases there is no postoperative treatment needed, still in others the patient must be treated as for any other case of prostatitis for several weeks postoperative.

RESIDUAL URINE

In some cases considerable residual urine may be present when the patient leaves the hospital. In our experience we have usually been agree-

ably surprised to find a quite rapid dwindling of the amount to normal emptying within a few weeks after operation. Undoubtedly a shrinkage of the gland occurs.

HOW PERMANENT ARE THE RESULTS?

Only time can tell. So far (eighteen months in about half our cases) the clinical aspects are splendid. In no case has there been any indication of recurrence of the obstruction.

SUMMARY. THE OUTLOOK, AND WHAT TO TELL THE PATIENT

It is the firm conviction of the writer, that judiciously applied resection not only will survive but will replace prostatectomy in a very large percentage of cases. It bids fair to place the prostatic in the hands of the urological surgeon where he belongs.

Not all cases of prostatic enlargement should be subjected to resection. In our series three cases have required prostatectomy.

We have made mistakes and have had our casualties. A review of our experience indicates however that these are being overcome and in this discussion the writer has endeavored to set down the ideas gleaned from experience in this series of cases.

Our series has not been without its mortality. No figures are given until a series of one hundred cases can be reported. Most of our mortality occurred in our earlier experience and in a poorly organized service in a charity hospital. We can say this, however, that in this series at least 25 per cent of the cases would never have been acceptable for prostatectomy and with this added hazard the mortality is well under our previous experience with prostatectomy in acceptable risks.

The patient usually comes cheered with the information that he can escape prostatectomy. Unless restrained in his enthusiasm he often assumes that he has only to make a short visit to the hospital with no inconvenience and thereafter all his trouble will be over. He must be informed of the advantages of the procedure but at the same time of its technical character, requiring perhaps more time in the hospital or a repetition of the operation. He must be impressed with the importance and often the necessity of postoperative care for several weeks or months. In several of our cases exacerbations of prostatitis occurred several weeks postoperative but have responded readily to the usual methods of care in such cases.

Our greatest delight is in the prophylactic aspect. We have been able to operate upon several cases in the earlier stages of prostatism. It is gratifying to note the slight disturbance and early recovery in these cases and to contemplate the avoidance of accumulating destructive pa-

thology, as these cases would not have accepted prostatectomy at this time.

505 Professional Building.

LEUKOPENIA

ARTHUR H. WELLS, M.D.

KANSAS CITY, MO.

Leukopenia is an important and interesting laboratory sign which, although it is found associated with many conditions, is quite typical and plays a major role in the diagnosis of several disease processes. The term is derived from the Greek, meaning white cell poverty. It is clinically demonstrated in the total white blood cell count and in the case of a diminution of the various individuals of the white cell series, the total count must be combined with a differential formula. Leukopenia then would include besides an abnormally low total white count, also numerical deficiency in the individual types of cells; e. g., neutrophilic leukopenia or lymphocytopenia.

The total leukocyte count and percentage values of individual white cells in normal persons are subject to a relatively wide variation which must be considered in the interpretation of the blood findings. While the generally accepted total count variation in the normal adult lies between 5,000 and 10,000 in peripheral blood examinations, a review of the literature shows a more elastic range. Rogers¹ in a study of 120 psychotic patients finds total counts varying from 2,000 to 15,000. Shaw² reports a range of from 4,500 to 15,000 in 116 apparently healthy individuals. Counts of 3,400 and 14,000 were the extremes of fifty normal people studied by Henderson.³ We must conclude from these and other studies that limited variations of the total white count from the commonly accepted values is at times consistent with normality.

For all practical purposes a deficiency in the neutrophils is the only cell type deficiency of great clinical importance. Monocytes are either normal in number or increased by pathological conditions. Basophilic leukopenia is hardly considered in the literature. Lymphocytes are extremely resistant to intoxications, being the last cells to disappear in conditions affecting all the blood elements. Only actual and relative increase in lymphocytic values are considered of clinical value in disease processes. The eosinophil count, according to Simon⁴ and others, is frequently diminished in some period in the course of any one of various bacterial infections. A more pronounced decrease even to no eosinophils in a total count of a thousand white blood

cells is found in the severe protracted cases. This low eosinophil value with a leukocytosis is evidence of a pyogenic infection. Since this value during convalescence from pyogenic infections returns to normal, there is said to be a prognostic significance in their reappearance.

Neutrophilic leukopenia, although often associated with a decreased count of the other leukocytes, is found to be the cause of low white counts in most conditions characterized by leukopenia.

It has been concluded that the low limit of the normal total white count, as given by most textbooks, does not embrace the normal variations of a few individuals who have a low tide in their white count. Other conditions considered physiological are found associated with a temporary leukopenia; e. g., short hot baths, prolonged cold baths and other stimuli to the vasomotor apparatus. The explanation of these phenomena is not known. Without microscopic proof one might theorize an abnormal distribution of the leukocytes.

Simple starvation, voluntary or pathological, is associated with abnormally low white counts. Lucci⁵ demonstrated a decrease of from 14,500 to 861 cells after seven days of fasting and during the following fifteen days without food the count raised to 1,530 and remained there; a relative lymphocytosis was constant. A large number of clinical conditions associated with simple starvation are possible. Low counts are occasionally found in stenosis of the esophagus, anorexia of neuroses, also with prolonged vomiting and diarrhea. However, leukopenia is so inconsistent in these conditions that its diagnostic value is nil.

Among the many drugs found by various authors to have occasionally caused a fall in the leukocyte count are atropin, camphoric acid, ergot, tannic acid, picrotoxin, menthol, phenol-hydrazene hydrochloride, sulphonal, thorium, benzol and arsphenamine. Chronic intoxications, notably those of lead, mercury, arsenic, ether, alcohol and morphine, have been found accompanied by a leukopenia. Protein injections frequently result in an immediate fall in the white cell count only to be followed shortly by a leukocytosis. The therapeutic use of roentgen ray or radium in large doses, continued over weeks and months rather than days, results in a demonstrable diminution of the hemapoietic areas of the bone marrow and a consequent severe anemia and leukopenia.

Benzol and arsphenamine poisoning deserve further consideration because of their very extensive use in industry and therapeutics, and because of their clinical similarity to a group of diseases herein described as malignant leuko-

penias. Selling⁶ in 1910 first called attention to the peculiar selective depressant action of benzol on the hemapoietic apparatus in man, resulting in a purpura hemorrhagic syndrome. The increased use of benzol as a solvent in many industries⁷ since the war has made this hazard important. There are many reports of a similar blood dyscrasia due to or following arsphenamine therapy. Not too much emphasis is to be laid on this fact for it is a rare condition. Coombes⁸ reports one case after 4000 injections. It is not due to toxicity of any certain batch or make of the drug. Fairley⁹ suggests a possible weak hemapoietic system in the patient. Itching, prolonged fever, skin rashes, purpura, jaundice and malaise are prodromal symptoms whose recognition in both types of poisoning is of obvious importance. There is a marked aplasia of the red bone marrow and replacement by fat. Therapy is frequently hopeless.

An important group of clinical entities is closely related through the characteristic malignant leukopenia. In fact they are so much alike that Stursberg,¹⁰ Marchand¹¹ and Blumer¹² agree that differentiation during life between overwhelming sepsis, the so-called aleukemic leukemia, and agranulocytosis is not possible. The syndrome frequently recognized as aplastic anemia belongs to this group. The existence of the first disease entity is common and proved beyond a doubt. However, the failure to recognize the etiology of the others has led to many grave doubts as to their existence as disease entities. Sternberg¹³ believed these conditions have much in common with acute leukemias, considering them peculiar reactions to severe generalized infections of the hematopoietic system. Nageli¹⁴ similarly held that most cases of aleukemic leukemia are primarily severe anemias of infectious origin. Long sustained fever with negative blood cultures proves nothing. Again, leukemia, agranulocytosis and aplastic anemia are frequently terminated by an infectious process, especially about the mouth, thus further complicating the problem.

Experimental injections of bacteria and their toxins are followed by various responses. A very large dose results in leukopenia and death, whereas, with smaller injections, a leukopenia is followed by leukocytosis and survival of the animal. Immunized animals may show little or no reaction. The ominous disappearance of granulocytes preceded by leukocytosis in severe infectious processes, e. g., pneumonia, general peritonitis, septicemia, etc., is a solemn and frequent observation. Blumer¹² describes cases of necrotizing pneumonia, perinephritic abscess, lung abscess, endocarditis and osteomyelitis, all presenting an agranulocytic blood picture. We

have recently diagnosed cases of miliary tuberculosis and severe pneumonia at autopsy which had followed clinical courses typical of granulocytosis. This unfavorable reaction of the marrow is generally the sign of submission of the protective powers of the host to the invading bacteria. At postmortem the blood, bone marrow and viscera are completely stripped of polymorphonuclear leukocytes. It may even be difficult to find these cells at the primary lesion.

The term aleukemia as given by Pinkerton,¹⁵ is commonly applied to an ill defined group of cases in which the blood picture during life shows severe anemia but does not justify the diagnosis of leukemia, while at autopsy, in addition to a leukemia-like cellularity of the bone marrow, accumulations of myeloid or lymphoid cells are found in the viscera. Further reason for linking this condition with leukemia is found in the facts given by King¹⁶ that in true leukemias leukopenia may develop spontaneously as a terminal event or at any time during the course of the disease. The situation is complicated by the high percentages of myelocytes and myeloblasts in the blood of known septic cases, as described by Krumbhaar¹⁷ and Herz.¹⁸ A suppression of other elements of the bone marrow, that is the red blood cells, and platelets with resultant anemia and hemorrhagic manifestations may aid in the diagnosis of the aleukemic type of leukemia.

It has been a decade since Schultz¹⁹ first described cases with severe gangrenous stomatitis associated with leukopenia as an entity, calling them agranulocytic angina. Since then an extensive literature has grown up about this syndrome. The etiology remains entirely unsettled. The condition is most frequent in middle aged females with an irrelevant past history and generally in good health. However, it is described in both sexes and from childhood to old age. The onset is acute and always associated with fever of moderately severe degree. Most cases have sore throat, dysphagia, headache and jaundice while malaise and chills are occasional. There generally develops a necrotizing ulceration of the tonsil or pharynx; however, extra-oral ulcerations are described in the stomach, small or large intestine, rectum, cervix, vagina, symphysis, hip and conjunctiva. Roberts and Kracke²⁰ and Harkins,²¹ as well as others, feel that the necrotic lesions are only secondary manifestations. There is a great decrease in the total white count with decreased or absent neutrophils, a relative lymphocytosis and increased monocytes. Normal erythropoiesis, absence of hemorrhagic tendency and no thrombopenia are characteristic. There are approximately forty cases in the literature which have

been cyclic or recurrent in nature. The clinical course is almost constantly a rapid failure and the development of pneumonia is frequently terminal. Of the forty-three cases collected from the literature by Kastlin,²² forty died in from four to eight days. The microscopic findings in the bone marrow are significant. It is cell poor with an almost total absence of granular cells and a predominance of lymphocytes and endothelial cells. The local ulceration and the terminal infectious processes show a strikingly poor cellular response with no neutrophils. The disease must be differentiated from the other members of this group and acute poisoning with benzol.

Cases referred to in the literature as aplastic anemia are characterized by fevers, purpuric manifestations, angioneurotic edema, occasionally pigmentation of the skin and rather constant profound anemia and asthenia without obvious causation. The blood picture is the main part of the clinical diagnosis. There is a progressive fall in red blood cell, platelet and granular cell counts; that is the bone marrow derivatives. As pointed out by Smith²³ and others, these elements may be affected in different degrees. There is an absolute lack of reticulated red blood corpuscles and a low relative lymphocytosis exists. The counts vary from 800 to 4000 with possibly 8 per cent polymorphonuclears. The course is rapidly fatal, secondary infections frequently being terminal. The finding of an aplastic marrow is conclusive if every other possible etiological factor has been ruled out.

Myelophthisis or atrophic or aplastic anemias produced by tumors and inflammatory processes such as multiple myeloma, metastatic carcinoma and leukemia, which crowd out the hemopoietic tissue from the bone marrow, are not often difficult to recognize. They are generally characterized by an initial irritation of the bone marrow with an increase in the number of polymorphonuclears, platelet and young red cells, followed by a distinct aplasia. To this group may be added the disease often labeled osteosclerosis, which is characterized by the formation of new bone within the haversian canals and cancellous spaces thus encroaching on the bone marrow, rarely to its total exclusion.

One is tempted to place pernicious anemia in this group, explaining the characteristic rise in the granular cell count from a typical leukopenia with remissions as being due to the simultaneous diminution of the congested condition of the bone marrow, as described by Peabody.²⁴ The response of the marrow to associated infectious processes evidences a depressed state of the white cell production. Arnetes count reveals

an increase in the number of cells with many lobules indicating a poor marrow activity. A clinical diagnosis of pernicious anemia and the myelophthisic anemia is not dependent on the finding of leukopenia; in fact it may play no part in their recognition.

The blood rhythm in Hodgkin's disease has attracted much attention in the literature. In a review of the subject Miller²⁵ concludes it is safe to say that as a rule the red blood cells suffer; on the other hand the white blood cells may remain normal in quantity and quality or they may range from a state of pronounced leukocytosis to a severe leukopenia. The latter condition cannot always be explained by bone marrow invasion of the tumor-like cells. Often protracted roentgen ray or arsenic therapy are blamed for the bone marrow exhaustion; yet others feel that the prolonged toxemia explains the depletion.

In primary splenic anemia and Banti's disease there exists from the onset a constant leukopenia due to a loss of granulocytes from the circulating blood. Goucher's disease has a similar depression of white blood cells. Visceral leishmaniasis causes a progressive anemia of the chlorotic type. There is also a characteristic and constant reduction in the total leukocytes, involving particularly the granular cells. The diagnosis here must be established by demonstrating the Leishman-Donovan bodies in the spleen or liver pulp. Diseases pathologically classified as infectious granulomas are often associated with a very mild leukocytosis, a normal blood count or occasionally a leukopenia. Syphilis, tuberculosis, chronic glanders, leprosy and actinomycosis are members of this group.

Jaundice and leukopenia are occasionally associated. Thewalis and Middleton²⁶ report 38 cases of catarrhal jaundice with a careful study of the blood pictures. There is an absolute decrease in all components of the leukocytes except the large mononuclear cells and the appearance of unusual lymphatic forms. Leukopenia is an almost constant blood finding in uncomplicated cases and a direct ratio between the degree of depression and the severity of the disease. The lowering of resistance incident to decrease in leukocytic function is of much importance in the convalescence of these cases and those to follow.

A well known group of acute infectious diseases including measles, mumps, chickenpox, influenza, dengue, typhoid fever and malaria are characterized by a low white count. Leukopenia is not of great diagnostic value in the childhood diseases mentioned yet it may be used as suggestive clinical evidence leading to isolation of patients before distinctive manifestations have appeared.

Many observers hold that leukopenia is invariable in uncomplicated influenza. The careful work of Adler²⁷ agrees with that of Bunting²⁸ on this point. There is an increase in leukocytes during the prodromal stage and the first febrile day followed by a leukopenia with lymphocytosis. The great poverty of the circulating neutrophils and inhibition of their genesis would seem to account for the frequent and serious nature of pyogenic complications in this group of diseases. The blood count does not return to normal for about a week so that convalescence must be arranged for accordingly.

Possibly the chief diagnostic importance of leukopenia is in connection with two diseases; namely, typhoid fever and malaria. In the former there is a leukopenia almost from the beginning. In the earlier days when the disease was more prevalent, at the onset of acute high fevers typhoid was generally suspected until leukocytosis suggested hidden suppuration. Malaria is generally associated with a reduction in the total number of leukocytes down to perhaps three or four thousand or less. There is a relative increase in the lymphocytes, not in the small members of this species as in typhoid, but in the large hyaline leukocytes which, associated with a history pointing to malaria, often aids in the differentiation of the two. The finding of parasites is conclusive.

It is not possible at present to classify the diseases associated with leukopenia into definite groups defined by the etiological factor behind the reduced white cell count. However, this may be possible in the near future with our rapidly advancing knowledge through the study of hematology.

Treatment of leukopenia per se would be a stimulation of bone marrow function on which subject a library of material has been written but practical results are as yet painfully lacking.

CONCLUSION

Leukopenia may be present in a great variety of disease processes and is for that reason frequently considered of less clinical value than it is due. Leukopenia may frequently play a major role in the recognition of a disease or group of similar diseases, and when combined with a history, physical examination and a study of the other blood elements, may lead to a diagnosis of otherwise obscure conditions.

Research Hospital.

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DIABETES MORTALITY IN NEW YORK CITY DURING THE THIRTY-YEAR PERIOD 1901-'31

Godias J. Drolet, New York (Journal A. M. A., March 11, 1933), states that in New York City, from 1901 to 1931, the recorded mortality from diabetes has risen from 503 to 1,921; or, from a crude rate of 14.2 per hundred thousand to 27.1, and from a standardized death rate of 17.3 to 27.9. Among females, diabetes mortality has increased more rapidly; the death rate, standardized, having been 16.3 in 1901 and 35.5 in 1931; whereas among males, adjusted similarly, it has changed only from 18.3 to 19.0. Among men past the age of 55, the diabetes death rate in New York City has, however, measurably increased; among women, the rise begins earlier, namely, at 45 years of age; and their death rate has gone up markedly. The population of New York City is almost 30 per cent Jewish, and in this racial group the proportion of diabetic deaths to all other causes exceeds markedly that of the non-Jewish white population of the city. Among the colored races, the death rate has been lower than in the white race, but the same excess among females has been noted in both groups. While a comparative shortage of food during the World War has here too been followed by some diminution of diabetes mortality, the use of insulin since 1923 has been accompanied by only a slight recession, which has been entirely lost since.

OCULAR CRISIS

REPORT OF TWO CASES

C. T. EBER, M.D.

ST. LOUIS

Oculogyric manifestations accompanying the parkinsonian syndrome, especially as a residual of encephalitis, has been of common occurrence since the last epidemic of influenza. Jelliffe¹ found 200 cases reported in the literature up to 1929, since then many cases have been added. These patients usually fall into the hands of a neurologist, comparatively few being observed by ophthalmologists except perhaps in consultation. Because of the comparative rarity of these cases in ophthalmic practice and the ease with which the symptom-complex may be confused with hysteria, particularly in the early stages of the syndrome unless one is familiar with the condition, I have taken the liberty of reporting two of my cases. They are quite typical and similar in many respects.

The external ocular manifestations during the attacks consist of lateral or vertical deviation of the eyes which is maintained for a period varying from several minutes to several days. Occasionally, the eyeballs are momentarily brought back to their normal positions only again to be thrown back into the deviated state. A blepharospasm often accompanies the attack and sometimes the eyelids are involuntarily closed. Other synergistic movements of the head and body may accompany the attacks. They are usually ushered in during emotional disturbances of the anxious type. Its similarity to hysteria is due to the fear component; almost invariably parkinsonian signs and symptoms are evident.

As restated by Bennett and Patton,² "Jelliffe has attempted to work out an organic and psychogenic origin for the seizures. His studies have been directed particularly toward the anxiety elements of fear in his patients as present in the attacks. These he considers were conditioned by an unconscious sense of guilt. His reasoning seems good, that there are organic pathologic changes with an overemotional response, producing the spasm of the eyes. Furthermore, while the symptoms of the eyes frequently come on unexpectedly without a warning, many patients are prone to attacks after emotional stress or fatigue. These factors may be sufficient to produce a release phenomenon of the controlling coordinating centers of the eyes. But the same affective disorders, usually over-anxious type, are seen in other postencephalitic states; in fact, these emotional changes are characteristic symptoms of previous encephalitic infection."

¹Read before the St. Louis Ophthalmic Society, January 27, 1933.

REPORT OF CASES

Case 1. Mrs. L. H., white, aged 20, housewife, entered City Hospital August 9, 1932, complaining of drowsiness, loss of weight, nervousness, palpitation and turning up of eyeballs. The patient dated all her trouble from the birth of her child three years before. She was fearful of childbirth but labor proved uneventful. Following this she became exceedingly nervous, easily irritated and angered quickly. She also noticed that her heart beat fast. During the last three years she noticed some drowsiness and in the last few months definite symptoms of lethargy had developed. About four years ago she had a severe cold which kept her in bed for a few days. During the last 16 months she lost fifty pounds in weight. She would sleep every afternoon and from 9 p. m. to 7 a. m. Her sleep was frequently disturbed by dreams. For the last three years she had attacks of oculogyric crisis in which the eyeballs rolled upward. The first attack occurred about three years ago; gradually they became more frequent and at this time occurred about once a week.

Examination of her eyes revealed nothing abnormal externally. The fundi were normal. Vision with each eye was normal for distance and near. Lid movements normal. Diplopia was elicited on extreme rotations to the right and left. Convergence normal. Pupils reacted normally to light. Form fields were of normal size.

General physical findings were grossly negative with the following exceptions: Masked facial expression; slight enlargement of thyroid especially of the left lobe; marked tremor of fingers; positive brachial, triceps, radial, abdominal, patellar and Achilles reflexes on both the right and left sides; Babinski and Chaddock reflexes negative on the right and left sides.

The basal metabolic rate was plus 13. Wassermann and Kahn examinations of her blood were positive but a Wassermann examination of the spinal fluid was negative. Neurological examination revealed a rather fixed masked-like expression, infrequent movement of the eyelids, pupils equal in size and with normal reaction to light and accommodation. The tongue was tremulous but protruded centrally. A spontaneous tremor in the left foot and both hands was evident. No rigidity of the upper extremities. Left quadriceps and bilateral ankle clonus (more marked on the left side) were found. The thyroid gland was palpable. No thrills present. Some impairment in strength of the left extremity. Clinically, the case was one of encephalitis rather than *lues spinalis*.

The patient remained in the hospital but a few days and did not return to the outpatient department for treatment.

Case 2. Mrs. M. H., white, aged 22, telephone operator, consulted me on March 7, 1931, with the following complaint:

During the last three months "eyes fly up in air and get set" and usually stayed set for several hours. The attacks occurred about two or three times a week and were followed by frontal headaches lasting two hours or more. The headaches were usually relieved by sleep.

Patient had diphtheria when a baby, pertussis when six months old and measles when a young child. During the 1918 epidemic she had influenza and was in bed for three weeks. No lethargic or mental symptoms followed until about two years ago when she suddenly became lethargic and "lazy"; she continued so up to the present time. This she attributed to childbirth since the symptoms were noticed following a miscarriage of twins of four and a half months' development. Two years ago she left her husband.

From that time until she obtained a divorce three months ago she was under considerable nervous strain and noticed cardiac palpitations and extreme excitability. She had been told that she had a goiter which was not verified by an estimate of her basal metabolism rate.

Her vision was 20/25ths without glasses and 20/15ths with glasses to correct a low grade compound hyperopic astigmatism. Aside from a slight nonpathologic blurring of the margin of the left disk no abnormality was found in the fundi. The eye rotations were normal, pupil reactions to light normal. No nystagmus, no diplopia. There was a slight exophthalmos, equal in both eyes. She had a definite fixity of facial expression characteristic of Parkinsonism and tremor of fingers. The form fields were of normal size.

Neurologic examination and further observation could not be obtained, since the patient passed from under my care.

1006 Carleton Building.

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TORSION OF THE SPERMATIC CORD

HOWARD B. GOODRICH, M.D.

HANNIBAL, MO.

Torsion of the spermatic cord is caused by the rotation of the testicle on its longitudinal axis. This causes a twist of the spermatic cord above the testicle. Clinically, torsion of the spermatic cord is recognized only when the twist is sufficient to interfere with the blood supply of the testicle and epididymis. Although there are approximately 150 cases on record, the condition undoubtedly occurs more commonly than these figures would indicate; nevertheless, it is a rare condition. Torsion may occur at any age but is most common in adolescence. The average age of 124 cases collected by O'Connor is 14 years and 4 months. Approximately 75 per cent of his cases occurred under the age of 20 years. Torsion of an undescended testicle is reported to have occurred at the age of eight months. About 50 per cent of all cases of torsion occur in undescended testicles and most of these are associated with congenital hernia. Six cases of torsion of an intra-abdominal testicle have been reported.

It has been determined that a testicle normally placed with a normal mesorchium cannot rotate sufficiently to interfere seriously with its blood supply. Any congenital malformation which allows abnormal mobility of the testicle may favor the occurrence of this condition. The most common anatomical abnormalities which allow this increased mobility are (1) the absence

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of the gubernaculum testis, (2) an abnormally long gubernaculum testis, (3) a capacious tunica vaginalis, (4) elongation of the globus minor and (5) an elongated mesorchium which resembles a narrow stalk instead of a broad band. Any one of these conditions or any combination of them may permit pathological rotation of the testicle.

The twist of the spermatic cord usually occurs within the confines of the tunica vaginalis. In many cases this is obligatory because of failure of the vaginal process to close above the testicle leaving a true congenital hernial sac. This defect is present in 90 per cent of all undescended testicles. When the vaginal process has closed after partial or complete descent of the testicle, the most distal fixed point of the cord is where it passes into the superior end of the tunica vaginalis. A twist of the cord below this point is necessarily within the tunica vaginalis.

Although at least four cases have been reported that occurred during sleep or without any history of trauma, there is usually a history of sudden muscular effort or a violent strain followed by a rapid onset of symptoms. Exactly how this muscular effort causes a torsion of the spermatic cord is not definitely known. Coincident with this muscular effort a sudden contraction of the cremaster muscle may be expected. It has occurred to us that if at the time of this contraction the abnormally mobile testicle is resting partly rotated in either direction, the pull of the cremasteric fibers will not be in a direct line and may inaugurate a spinning rotation of the testicle in the opposite direction. This rotation may be either clockwise or counter clockwise, depending upon the initial pull of the cremaster muscle. If the rotated force is sufficient, the whirling testicle twists the spermatic cord to the point of interfering with the circulation. As many as four complete turns of the testicle on its longitudinal axis have been reported. Usually, a single complete turn interferes with the circulation sufficiently to cause symptoms.

In many cases the torsion at first probably does not occlude the arterial circulation but interferes only with the venous return. This probably explains why many of these cases operated upon relatively early show a hemorrhagic infarction of the testicle or epididymis. The progressive swelling which follows increases the obstruction to the arterial circulation and may completely shut off the blood supply. Gangrene may follow. If sufficient circulation remains to prevent gangrene, merely atrophy results.

Torsion of the spermatic cord usually mani-

fest itself by the appearance of severe pain in the testicle shortly after the exciting muscular strain. The pain becomes steadily more severe and swelling is soon apparent. This may be accompanied by nausea, vomiting, lower abdominal pain, moderate tympanites, constipation and more or less shock. After twenty-four to forty-eight hours these general symptoms moderate while the local swelling and pain continue to increase accompanied by the appearance of edema and erythema of the overlying tissues. A few hours after onset a slight to moderate elevation of temperature usually appears and continues. Cases that are developing gangrene present diminishing pain and tenderness. Cases where the testicle is not developing gangrene show persistence of pain and tenderness for a longer period, and atrophy without suppuration is the rule.

If the torsion occurs in a testicle lying in the scrotum a diagnosis of epididymitis or orchitis is most often made. Unless torsion of the spermatic cord is kept in mind it is usually not suspected. Later, if the persistence of the symptoms warrants exploration, the true condition is revealed. Most of these cases are not operated upon until a week or more after the onset of symptoms; gangrene is then usually well developed and the testicle must be removed. Other cases undoubtedly are not suspected and are treated as acute epididymitis or acute orchitis. In these, with the final subsidence of symptoms, atrophy of the testicle is noted.

If the torsion occurs in an undescended testicle and the tumor in the inguinal canal is associated, as is usual, with vomiting, distention and other intestinal symptoms, a diagnosis of strangulated hernia is usually made, although the symptoms, prostration and constipation may not be as severe as would be expected in that condition. In these cases exploration is usually done within forty-eight hours, before true gangrene has developed. The testicle and epididymis in such a case will usually show more or less hemorrhagic infarction and although detorsion may prevent progression to gangrene subsequent atrophy of the testicle may be expected.

In any case of torsion of the spermatic cord where frank gangrene has developed the treatment is orchidectomy. In the case of torsion occurring in an intrascrotal testicle and recognized before gangrene has developed, it would seem to be more conservative judgment to leave the damaged organ, although recognizing that further interference will be necessary if gangrene develops and that most of those which do not progress to gangrene will become atrophic and functionless.

If there is a functioning testicle on the op-

posite side in any case associated with an undescended testicle, orchidectomy should be performed even though recognized before gangrene has developed. This seems indicated because the majority of undescended testicles are functionally inactive, malignancy of an undescended testicle is far more common than in a normally placed testicle, and a better repair of the usually accompanying hernia can be made. However, if the other testicle is atrophic or not demonstrable, as in the case here reported, it would seem better judgment to leave the damaged organ with the hope of some functional activity surviving, particularly in a case occurring before puberty.

REPORT OF CASE

T. D., aged 12, admitted to St. Elizabeth's Hospital, December 7, 1931. Past history showed both testicles were undescended at birth and had never descended into the scrotum. The father was told that the boy also had a rupture on each side. There was no noticeable mass in either groin while resting but a mass would appear in either inguinal region on lifting or straining. This caused discomfort which would be relieved by lying down and pushing the mass upward.

Present Illness.—Three days before admission to the hospital he had carried a heavy load of wood into the house which caused momentary discomfort in the left groin. Two hours later when he retired he noticed definite discomfort in the left groin but no swelling. He slept well that night. The next morning he noticed considerable discomfort and some swelling in the left groin. He was nauseated all that day and vomited twice, the pain was more definite and the swelling increased slightly. That night he slept restlessly. Next morning he felt about the same with persistent discomfort and unchanged swelling. He was able to walk in discomfort with the aid of a cane. That evening when getting into bed he had a sudden and very severe pain in the left groin. The swelling seemed to increase rapidly. The intense pain became somewhat diminished after an hour but increased tenderness and swelling appeared progressively. He was unable to sleep. The next day the pain, swelling and tenderness were increased. Felt chilly and feverish. No return of the nausea but has eaten practically nothing since the onset. Bowels have moved only once since the onset of symptoms and not during the last forty-eight hours.

Examination showed a rather tall and fairly well nourished boy complaining of severe pain in the left inguinal region. He appeared acutely ill. Temperature 101, pulse 90, blood pressure 90/62, white blood count 14,200, polymorphonuclears 83 per cent. Tongue slightly dry, cheeks flushed. Heart and lungs normal. Abdomen moderately distended and tympanitic throughout; no definite rigidity or tenderness, no scars or evidence of free fluid. In the left inguinal region is a rounded mass, slightly reddened and indurated, tender, fluctuant and about 6 cm. in diameter. The scrotum is empty. No testicle can be felt in the right inguinal canal. A differential diagnosis of suppurative inguinal adenitis or strangulated hernia was made with the suppurative condition favored.

Operation showed a clockwise torsion of the left spermatic cord to the extent of one complete turn.

The testicle undescended was lying in the inguinal canal associated with a congenital hernia. The tunica vaginalis which was continuous with the peritoneal cavity ballooned out below the external inguinal ring forming the larger part of the mass. It was filled with slightly blood tinged serous fluid. The epididymis was enlarged and resembled a dark organizing blood clot. The testis was grayish yellow, not greatly swollen, of unhealthy appearance, but presented no frank gangrene.

The testicle was untwisted and its color improved slightly. The cord was freed as much as possible. The testicle was brought down as low as was reasonable without undue tension, reaching just below the level of the external ring. The sac of the tunica vaginalis was closed over the cord and testicle as far as consistent without undue tension. The external oblique fascia was sutured to the poupart's ligament, a rubber tissue drain was inserted and the skin closed with silk worm mattress sutures.

Convalescence was uneventful. The temperature returned rapidly to normal and his appetite was soon hearty. Drainage was serosanguinous, scant after the first twenty-four hours. The drain was removed on the fifth day, the sutures on the eighth day, the patient was out of bed on the thirteenth day and went home the following day. At that time the mass at the external ring was a little larger than a normal testis.

Trust Company Building.

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COD LIVER OIL CONCENTRATE (CONCENTRATED VITAMINS A AND D)

The frequency with which localized purulent infections appear on the mucous membranes of animals and of man deprived of vitamin A has led W. D. Sutliff, Edwin H. Place and Samuel H. Segool, Boston (*Journal A. M. A.*, March 11, 1933), to the view that an adequate supply of this vitamin may be essential for the maintenance of resistance to infection. They observed that the total incidence of otitis media in 343 cases of scarlet fever during five months was 11.3 per cent, a figure corresponding closely to that recorded by others. The total incidence of this complication in 509 similar cases observed during five months at the same time of year two years later, most of which were treated for ten days after admission to the hospital with a total of 400,000 U. S. P. units of vitamin A contained in a concentrated preparation of cod liver oil, was 9.4 per cent. The use of cod liver oil concentrate in such dosage had apparently no effect on the liability of the scarlet fever patients to develop otitis media.

A NEW ELASTIC BREAST BINDER FOR SUPPORT OR COMPRESSION

OTTO S. KREBS, M.D.
SAMUEL D. SOULE, M.D.
AND
HILDA C. CROSBY, M.D.
ST. LOUIS

One of the most disturbing problems in the postpartum care of the recently parturient mother is that of the engorged breasts. There seems but little doubt that in the majority of cases the best care is rendered by mere support and sedation. However, more than occasionally the tightly engorged breast is encountered and in this situation support alone does not suffice.

In our opinion the principles involved in the care of these overdilated, engorged breasts consists of support, exposure of nipples, and peripheral constriction without compression of the breast. This latter factor is most commonly abused. The old-fashioned breast binder, arranged on the principle of the abdominal binder, with possibly a towel under the breast for additional support, not only covers the nipple, but compresses the entire breast.

Polak,¹ in an excellent article on postpartum care, described an adhesive support. We have used this binder many times for tightly engorged breasts and find it far superior to the old cloth binders. However, even though the adhesive is applied properly there is no way of accounting for differences in tension of the breast as it empties itself of milk, and the adhesive becomes soiled, saturated with milk and sticky. This often causes itching, especially during hot weather, and the discomfort of removing it renders its usage unpopular with many patients.

In the evolution of the breast support to be described later, a two or three inch elastic bandage was first applied about the breast concentrically from periphery to areola, similar to one of the methods described for the use of adhesive tape. With this type of bandage there were several difficulties encountered. The first was

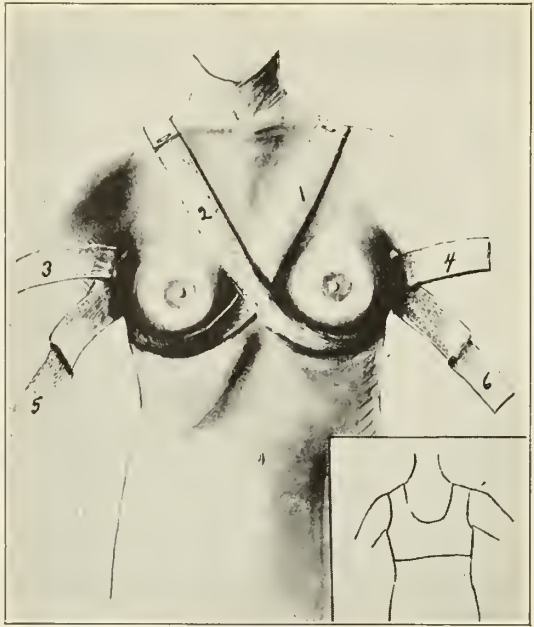


Fig. 2. Straps 1 and 2 in place fastened to opposite shoulder band with safety pin. Insert shows back view.

in making the elastic bandage stay in place and not telescope. The first turn of the bandage was fastened with adhesive to the chest wall in various places, and as the bandaging proceeded, various of the turns of the bandage were themselves held together with adhesive placed at right angles to the direction of the bandage. In perfectly symmetrical breasts the result was ideal but in others this method of fixation was entirely unsatisfactory, and about all that was accomplished was the temporary expression of lacteal secretion that took place during the actual procedure. In an attempt to hold this bandage in place several strips of cardboard with projecting points such as thumb tacks placed at regular intervals and held in place by adhesive were fixed to the breast in radial directions and the bandage wound around these concentrically. With this method the difficulty of fixation was overcome, but the anatomical variations in the breasts made it difficult to obtain the concentric compression leaving only the areola uncovered.

Working still for support, exposure of nipples and peripheral constriction, a three inch rubber elastic bandage was applied in figure of eight fashion about the breasts while supporting them together in the midline. The angles at the axillae were brought together with safety pins. This was remarkably effective in most cases for, as the breast emptied itself of milk, the elastic followed the breast down and maintained even peripheral constriction and at the same time the nipples were exposed. The binder could be used for mere support, moderate constriction, or even for drying up the breast

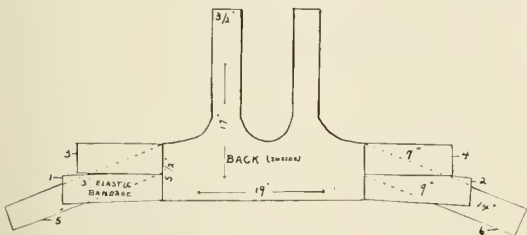


Fig. 1. Pattern of binder showing dimensions of the component parts.

From the Department of Obstetrics and Gynecology, Washington University School of Medicine and the St. Louis Maternity Hospital.

1. Polak, J. O.: Further Study in Puerperal Infections and Their Treatment, *Am. J. Obst. & Gynec.* 10:521-583, 1925.

depending upon how tightly it was applied. On the other hand, considerable skill was required in learning to apply the bandage properly, and the patient had to sit up or be propped up with each turn of the bandage. Moreover, occasionally the binder slipped, particularly over the upper part of the breast.

In the fall of 1931, a binder with a back of double thickness unbleached muslin and three rubber elastic strips across the front was devised and since that time has been used constantly with excellent results. The binder is easily applied with the patient lying flat in bed, excess milk drains, the breasts soften and great relief is obtained. In the early months a considerable amount of constriction was used and the binder left on for only two to three hours, but, as time went on it was found that better results were obtained and the patient was much more comfortable when the tension applied was but moderate and the binder left on for 12, 24, or 48 hours, with adjustments as needed to fit any marked decrease in size of the breasts or to replace a part dislodged by moving in bed. This binder is particularly useful for breasts which are to be dried completely, those with cracked nipples that cannot be nursed, and those that are definitely engorged and painful. If considerable milk is present, it will begin to leak even before the adjustment of the binder is completed. A soft towel may be laid over or draped below the nipples to absorb the overflow. In very flat breasts it is sometimes difficult to obtain com-



Fig. 3. Straps 1 and 2 fastened. Straps 3 and 4 have been brought over the breasts and pinned in midline. If necessary, these straps may be fixed further by pinning them to the previously placed straps 1 and 2.

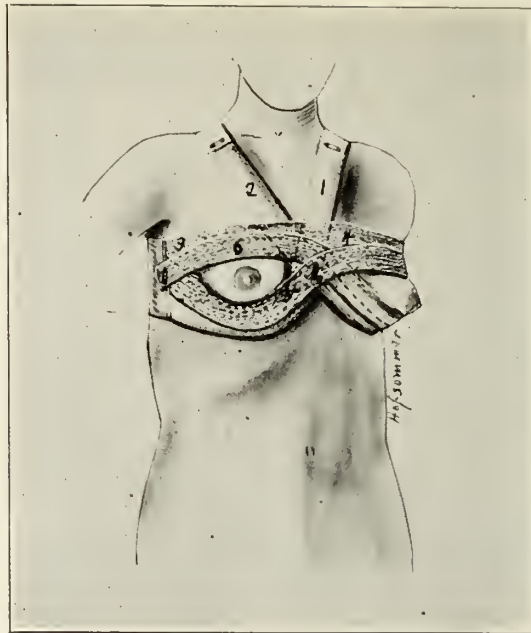


Fig. 4. Straps 1 and 2, 3 and 4, have been placed and fastened. Straps 5 and 6 make a figure of eight, under the breast on the same side as its attachment and over the other. Ends are pinned to the binder at outer margin of breast and to such of the underlying straps as is necessary.

pression continually as the binder tends to slip but by more frequent adjustments this difficulty can usually be overcome. The same holds true for excessively large breasts.

The only real disadvantage of this binder is its relatively short life, for due to the constant stretching, pinning, and washing, though the latter is done carefully by hand, the separate rubbers tend to break after much usage and render the whole bandage somewhat less compressive. Because of this, a woven bandage was substituted, but even by using double thickness, it was not as satisfactory for purposes of compression though it served quite well for support.

For a small patient the binder may be adjusted by making a longitudinal tuck of any desired size with pins on the muslin just behind the junction with the elastic, so that the tuck will lie just at the edge of the angle of the breast tissues.

The accompanying diagrams will make clear the details of the binder and its mode of application.

207 Beaumont Building.
St. Louis Maternity Hospital.
St. Louis Maternity Hospital.

PROTEIN NITROGEN AND NONPROTEIN NITROGEN DETERMINATIONS ON GASTRIC JUICE

Lay Martin, Baltimore (Journal A. M. A., May 13, 1933), states that, in the normal gastric juice, protein nitrogen and nonprotein nitrogen fractions (amino acid, urea, uric acid and ammonia) were found in amounts that varied within but small limits.

A NEW ELECTRICAL BASSINET
WARMER

PHILLIP S. ASTROWE, M.D.

KANSAS CITY, MO.

The maintenance of the body temperature at a physiologic level is essential to the welfare of the new-born infant. The heat regulatory mechanism is unstable and its efficiency is in abeyance being more adequately developed in the full term than in the premature infant.

The body temperature is affected by a number of factors, such as external heat, muscular activity, sleep, the amount of subcutaneous fat, digestion, fasting, etc. Of these the external temperature is of the greatest importance during the first twenty-four hours after birth. If the environmental changes are excessive, metabolism is altered and susceptibility to infection increases. Heat production and heat loss are ordinarily well balanced when the heat regulatory mechanism is fully established. But in the new-born this process is ineffective, having never been called into play. It is, therefore, a common practice to assist these forces during the period of adjustment by applying external heat in one form or another in order to maintain the body temperature at the desired level.

The method usually employed consists in surrounding the infant with some form of external heat—warm blankets, hot water bottles, warm bassinets, or their equivalent. But there are many valid objections to such methods. The use of warm blankets necessitates frequent changes and constant observation by an attendant. Hot water bottles are objectionable because of occasional burns from too intimate contact with the infant's body, accidental spilling of the contents or because of alarmingly high temperatures from instability of the heat regulatory mechanism. A bassinet heated by

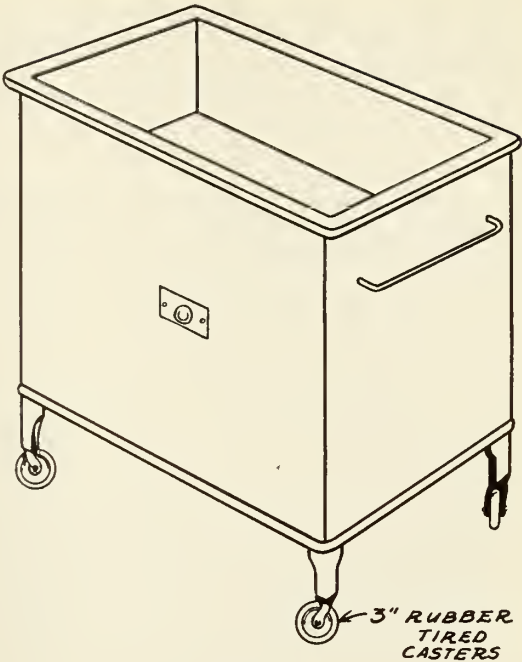
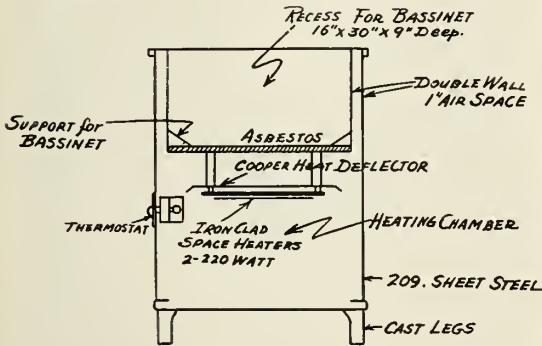


Fig. 2

electric bulbs at the bottom of the crib is an attempt in the right direction but its inefficiency would rule it out of consideration as a practical method of maintaining body temperature at the desired level.

I believe the apparatus here described eliminates these objectionable features. It has been in use for one and one-half years in the maternity ward of Menorah Hospital and has been commended by the obstetrical staff, who have



CROSS SECTION OF WARMER.

Fig. 1

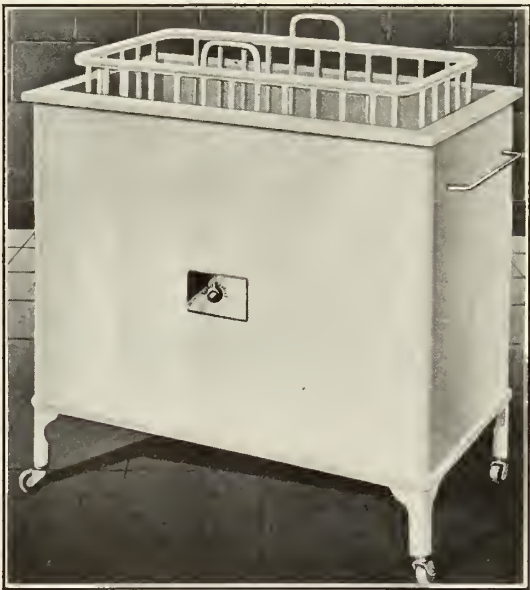


Fig. 3

From the Pediatric Department, Menorah Hospital.

urged publication of this report. As will be noted from the description, the apparatus obviates constant watching, maintains a uniform temperature and eliminates the hazards found in other methods now generally employed.

DESCRIPTION OF APPARATUS

The apparatus consists of a sheet steel cabinet divided into two parts, (1) a recess for the bassinet which may be removed for cleaning and sterilizing, and (2) a heating chamber in which is placed an electrically controlled heating unit. The cross section of the apparatus (figure 1) shows these two features. Figure 2 shows the apparatus as assembled ready to receive the bassinet containing the infant. Figure 3 shows the bassinet in place.

The bassinet compartment, 16 x 30 x 9 inches, is made of sheet steel with an asbestos floor and one inch air space around all four sides of the bassinet. Two 220 Watt space heaters are located below the bassinet holder, with baffle plate to insure even distribution of heat. The temperature within the bassinet is regulated by an adjustable mercury switch thermostat which may be set for the desired temperature. (The apparatus is manufactured by the Scanlan-Morris Company, Madison, Wisconsin.)

400 Argyle Building.

PERSISTENT DERMATITIS

E. W. Netherton, Cleveland (Journal A. M. A., March 11, 1933), reports the case of a married woman, aged 41, whom he has had under observation for a period of two years, and who developed an unusual left-sided facial eruption following an operation on the gasserian ganglion. The eruption did not appear until one year following the operative procedure. The appearance of the eruption was that of a permanent flush with periodic exacerbations of an exudative inflammation. These exacerbations frequently followed exposure to heat, cold, wind, and the use of soap and water and, as would be expected, were not accompanied by subjective symptoms. The patient was observed several times over a period of one year and at no time was there any involvement of the right side of the face. Likewise there were no vesicles suggestive of herpes. The patient had had attacks of urticaria and mild attacks of flexoral eczema, which antedated the operation for trigeminal neuralgia. Lack of cooperation prevented the author's complete investigation of this phase of her condition, but the nature of the lesion and its limitation made it seem unlikely that the dermatitis was the manifestation of an allergic state. A biopsy was not obtained. This request was not pressed because the patient was somewhat vindictive and refused to have any more operative procedures. The patient threatened to file a suit for malpractice because of the development of the dermatitis following the operation on the trigeminal nerve. This threat was not carried out, but it does suggest the possibility that such cases, in addition to their unusual clinical interest, might have some medicolegal significance.

UNUSUALLY LARGE STRANGULATED ABDOMINAL HERNIA

OPERATION UNDER UNFAVORABLE CONDITIONS.
COMPLETE RECOVERY

FRANK J. SMITH, M.D.

ST. LOUIS

REPORT OF CASE

Mrs. B. came under my care in 1920 for some minor ailments. I found her in a wheel chair in which she said she had spent most of the last eighteen years. On examination I found an enormous abdominal hernia, apparently with most of the intestines in the sac. She had consulted a number of surgeons about an operation some ten years previously. She was informed that she had a heart lesion and was advised against operation. She stated that she often had pains in the abdomen, felt nauseated and vomited. The symptoms would pass away and she would be relieved for six months or a year. She had marked constipation. I again saw her in 1925 when she stated that during the few intervening years since I last saw her the attacks had become more severe. Three or four days before coming to me the bowels had not moved. In 1926 I was called to see her and found her suffering from a strangulated hernia. Figure 1 shows the main cause of her having been sent to the hospital. She had previously refused hospital treatment. Figures 1 and 2 are conclusive evidence of the pathological condition that existed at the time of the operation. It was done as an emergency because her general condition was unsuited for an elective operation, as it is in most cases of strangulated hernia of this type. Most of the operation was done under local anesthesia. An elliptical incision was made. The mass weighed about 85 pounds when removed by



Fig. 1



Fig. 2

a typical overlapping Mayo operation. The intestines were dark but hot saline packs restored the color. There was no obstruction to the mesenteric vessels. No resection was necessary. A drain was placed in each angle of the wound at the side. Patient was returned to bed in good general condition, made a good recovery in about three or four weeks and was discharged from the hospital with a well fitted corset. Figure 3 shows her general condition when discharged from the hospital.

My reasons for reporting this case are: the unusual size of the hernia, the length of time the condition existed, and the lack of sufficient time to prepare the patient properly. From my experience I believe patients with large hernias should be put to bed for at least two weeks and fully prepared for operation. Probably the pa-

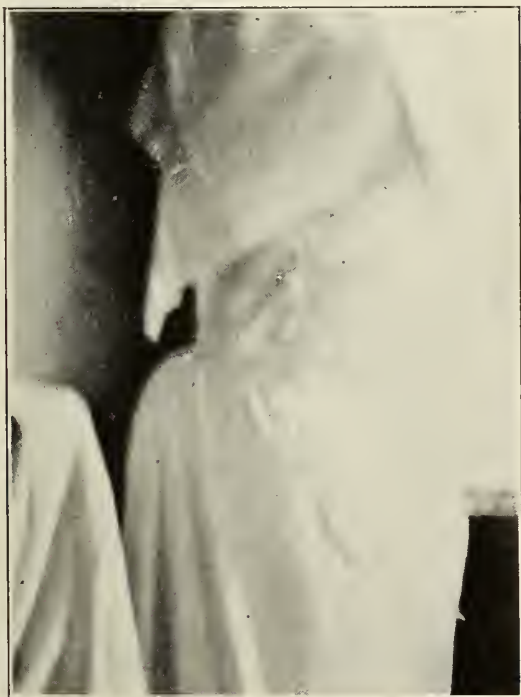


Fig. 3

tient would have saved herself and the members of her family a great deal of suffering and discomfort had she consented to an operation a number of years before.

4930 Lindell Boulevard.

MYXEDEMA WITH HYPERTENSION IMPROVED WITH THYROID MEDICATION

L. G. LIVINGSTON, M.D.

CORDELL, OKLA.

Myxedema is a chronic metabolic condition due to affection of thyroid secretion, most frequently insufficient secretion being blamed. The disease is characterized by lowered metabolism, impaired mentality and an overgrowth of fat and connective tissue. Myxedema was first described by Gull and in 1882 its relationship to the thyroid gland was shown by the Reverdin brothers.

Two primary causes are recognized, (1) operative removal of the gland, and (2) destructive disease or injury. Congenital absence causes cretinism rather than myxedema. The case to be presented is one of evidently long standing myxedema with resultant secondary changes due to the long existence of the disease.

REPORT OF CASE

White male, aged 28, first came under my observation September 17, 1932. His only complaint was that he wished to have his speech corrected so he could be a preacher. His mother said he was weak, short of breath and too fat. She also realized that his mental age was that of a child. Mother had noticed his development was slow when he was two years old. He went as far as the fourth grade in school and has done some farm work since then. He can read fairly well but speech is hampered by the thickened tongue. Never married and practices masturbation. Family history and past history negative for injury or thyroiditis.

Physical examination reveals a very obese man oriented as to time and place. Is very pleased at having some attention paid him and feels important because of this attention. Cooperative, unintelligent, thick harsh voice. Is short of breath and perspires freely.

Scalp is rough, dry and scaly, hair fine, head almost square, eyelids puffy, sufficient to cause squinting, and conjunctivae red. Palpebral fissure narrowed and much lacrimation; is nearsighted. Nose somewhat flattened and nasal orifices large. Teeth dirty, wided-set but in good condition. Breath is foul, tonsils red and much postnasal discharge. Neck thick and a posterior pad of fat over the lower cervical and upper thoracic vertebrae. Chest almost barrel shaped with deposits of fat over the mammary regions and scapulae. Cardiac dullness enlarged one and one half inches outside the nipple line; no downward en-

Read at Wright-Douglas County Medical Society Meeting, December 15, 1932.

largement. Heart sounds faint but no murmurs. Blood pressure 198/105, pulse 68. Abdomen very obese with thick pad of dependent fat. Genitalia normal; masculine hair distribution. Extremities show a thick nonpitting edema, worse on the dorsum of the hands and the face. Weight 215 pounds. Knee jerk slightly overactive. Skin rough and scaly, perspiring freely. Urinalysis showed specific gravity 1.000, no albumin or sugar; a few crystals and an occasional epithelial cell. Due to lack of facilities the following desirable tests were not made; B.M.R., E.K.G., roentgen ray of heart for size.

A diagnosis of myxedema was made on the following clinical findings: Weakness; dyspnea; nonpitting edema of the face, hands and tongue; slow pulse; rough skin; characteristic voice; mental deterioration; lethargy and obesity.

Patient was placed on nine grains daily of thyroid (desiccated gland) by mouth and observed morning and evening for toxic signs. A total of three hundred grains was taken. One month later under continuous medication the following changes were noted: Increased strength, less dyspnea, less edema, pulse 88, blood pressure 138/88, weight 205 pounds, smoother skin. Mentality little improved but it was noted that he fought back with the boys who teased him where he did not before. Name writing was somewhat improved. Urinalysis unchanged.

Patient refused further medication feeling that he had not been helped though his family felt that he had been.

This case is very interesting for several reasons. It shows marked physical improvement over a relatively short period of time though relatively little mental improvement with thyroid medication. This case also shows the hypertension and kidney damage noted in a case reported by Duden in 1929 and, similar to his case, the lowering of blood pressure by thyroid medication. Duden believes the myxedema of the rest of the body is coexistent in the heart muscle thereby interfering with the function of that organ and producing what might be called a compensatory hypertrophy—a very probable explanation. Is it not also possible that myxedematous kidneys induce a compensatory increase in blood pressure? Myxedematous patients most often die of chronic nephritis or cardiac failure. Perhaps there is a close relationship between myxedema and nephrosis which is also helped by thyroid medication.

Could this patient have been induced to remain on thyroid longer I believe the kidneys would have been improved in spite of the long standing damaging effects of arterial hypertension. Mental improvement would be slow if attainable.

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HEART IN BILATERAL OBSTRUCTIVE EMPHYSEMA DUE TO TRACHEAL FOREIGN BODIES

Sherwood Moore, Hugh M. Wilson and M. F. Arbuckle, St. Louis (Journal A. M. A., March 11, 1933), observed a fluoroscopic and roentgenographic change in cardiac outline (a decrease in size) on expiration in bilateral obstructive emphysema in one case of laryngeal and three cases of tracheal foreign bodies with bilateral obstructive emphysema. The percentage of decrease in the size of the heart as measured by surface area varied from 8 to 25. The decrease in transverse diameter varied from 8.8 to 28 per cent.

ELECTROGALVANIC LESIONS OF ORAL CAVITY PRODUCED BY METALLIC DENTURES

Everett S. Lain, Oklahoma City (Journal A. M. A., March 11, 1933), made a study of more than 300 oral cavities that contained dissimilar metallic dentures, 71 per cent of which showed some evidence of electrogalvanic phenomena. He observed that the human saliva is a good electrolyte and dissimilar metallic dentures constitute the necessary electrodes; therefore, within every oral cavity containing dissimilar metallic dentures there is a complete galvanic battery. The intensity of the current and the pathologic changes produced depend on many physical and electrochemical factors.

EFFECT OF HYPERTONIC DEXTROSE SOLUTIONS ON INTRACRANIAL PRESSURE IN ACUTE CRANIAL INJURIES

In order to determine accurately the efficacy of the intravenous injection of hypertonic dextrose solutions in acute cranial injury in man, Harry Jackson, with the assistance of Toshio Kutsunai, L. O. Leader and L. D. Joseph, Chicago (Journal A. M. A., March 11, 1933), used it in many cases and reports his results in twenty clinical cases. In ten cases, 100 c.c. of 50 per cent solution was used and, in ten cases, 200 c.c. of 25 per cent solution. The solution was injected slowly during a period of from twenty-five to thirty minutes into the veins of the forearm. He summarizes the results as follows: In eleven cases there was an initial drop in pressure of from 1 to 4 mm. of mercury during the first thirty minutes; then a gradual rise to a point above the initial pressure in two hours. In some cases this increase amounted to as much as 50 per cent of the original pressure. This was reduced to the initial pressure in twenty-four hours. In nine cases, however, the rise was immediate and continuous for two hours, with slight fluctuations, and gradually returned to the initial pressure in twenty-four hours. In about half the cases the blood pressure rose and the respiration became labored. This was more evident with the 50 per cent solution than when a 25 per cent solution was used, but it occurred with both. Headache was relieved for a short time in some cases, but not to the degree of relief obtained when spinal fluid was withdrawn, as was done in several cases. In normal animals used for experimental purposes, there is a primary fall in pressure because there is no hindrance to the circulation in the sinuses; the secondary rise in pressure is due to the absorption of dextrose by the brain cells and causes edema of the brain, but to a less extent than was found when sodium chloride was used.

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JUNE, 1933

EDITORIALS

THE KANSAS CITY SESSION

The Seventy-Sixth Annual Session of the Missouri State Medical Association convened in Kansas City, May 1, 2, 3 and 4 with the largest attendance in the history of the Association. Each phase of the meeting was in keeping with the attendance; the scientific program was unusually valuable and instructive; each session was well attended; guest speakers delivered addresses specifically informative, and idle moments were well filled with entertainment.

Fifty-seven papers were presented, many of them of value to all practitioners; others of them highly specialized and instructive to the specialist in those fields.

On Thursday morning the program on tuberculosis, planned and arranged by Dr. Sam H. Snider, Kansas City, was given, and a vote of thanks to Dr. Snider at the close of the session showed the appreciation of the physicians in attendance.

Of such value did physicians in eye, ear, nose and throat work consider the Thursday afternoon session that it was voted a Section in Eye, Ear, Nose and Throat be a permanent part of the Missouri State Medical Association. Officers of the Section were elected, Dr. Albert N. Lemoine, Kansas City, chairman; Dr. Robert L. Forgrave, St. Joseph, vice chairman, and Dr. Wm. E. Keith, Kansas City, secretary. The program was prepared under the auspices of the Kansas City Ophthalmology and Otolaryngology Society and the Ophthalmologic Section of the St. Louis Medical Society.

The distinguished guests of the Association were enthusiastically received. They were Drs. Charles A. Elliott, Chicago; Dr. Arnold S. Jackson, Madison, Wisconsin; Dr. Peter C.

Kronfeld, Chicago, and Dr. J. Gordon Wilson, Chicago.

From two to three hundred were in attendance at each scientific session and a large lay group attended the open meeting on Tuesday evening.

Dr. A. R. McComas, Sturgeon, chairman of the Council, was honored by a dinner on Tuesday evening given by his friends in recognition of his years of service and devotion to his profession and the Association.

The Jackson County Medical Society was host to visiting physicians on Wednesday evening and both entertainment and refreshments were highly praised by the guests.

The Kansas City committees under the able direction of Dr. A. J. Welch, general chairman, were diligent in performing their duties and much of the success of the meeting was due to them. Dr. James R. McVay was chairman of the committee on entertainment; Dr. A. Morris Ginsberg, chairman of the committee on publicity; Dr. H. L. Mantz, secretary of the Jackson County Medical Society, and Dr. Clarence Capell, chairman of the committee on golf.

The House of Delegates elected the following officers: President-Elect, Dr. C. T. Ryland, Lexington; Secretary-Editor, Dr. E. J. Goodwin, St. Louis; Assistant Secretary, Mr. E. H. Bartelsmeyer, St. Louis; Treasurer, Dr. Ross A. Woolsey, St. Louis, to succeed Dr. George W. Hawkins, Salisbury; Vice Presidents, Dr. J. F. Owens, St. Joseph, H. John Wise, Sparta, and P. W. Jennings, Canton; new Councilors, Dr. W. A. Braecklein, Higginsville, Fourteenth District, Dr. T. W. Cotton, Van Buren, Twenty-Fourth District, and Dr. H. A. Lowe, Springfield, Thirty-First District.

At the Wednesday afternoon session President Love appointed Drs. Spence Redman and E. Lee Miller as a committee to escort Dr. W. L. Allee to the president's chair. In a few brief remarks Dr. Love presented Dr. Allee to the members.

Dr. Allee announced his appointments to committees as follows, all of which were approved: Scientific Work, Dr. E. J. Goodwin, St. Louis; Postgraduate Work, Dr. C. H. Neilson, St. Louis; Publication, Dr. J. C. B. Davis, Willow Springs; Public Policy, Dr. J. F. Harrison, Mexico; Defense, Dr. Charles E. Hyndman, St. Louis; Medical Education and Hospitals, Dr. R. A. Woolsey, St. Louis; Committee on Cancer, Dr. Floyd Spencer, St. Joseph; Revision of Constitution and By-Laws, Dr. M. P. Overholser, Harrisonville, and Medical Economics, Dr. Joseph W. Love, Springfield.

The 1934 Session of the Association will be held in St. Joseph.

PHYSICIANS APPOINTED TO VARIOUS POSITIONS

The change in political administration of the State and St. Louis has brought changes in the personnel of medical appointees to boards and institutions. Almost without exception these appointments have won the approval of the profession.

In appointing members to the State Board of Health to succeed those whose terms have expired, Governor Park has drafted practically every one. The new members are Dr. Emmett P. North, St. Louis; Dr. Peter T. Bohan, Kansas City; Dr. William T. Elam, St. Joseph, and Dr. Elmer T. McGaugh, Richmond. The hold-over members are Dr. H. S. Gove, Linn; Dr. E. Sanborn Smith, Kirksville, and Dr. W. A. Clark, Jefferson City. The board held a meeting in Kansas City on May 1 and elected the following officers: President, Dr. Emmett P. North; vice president, Dr. Peter T. Bohan, and secretary, Dr. Elmer T. McGaugh.

Dr. North served as a member of the board for seven years and was president of the board during the strenuous days when in 1923 the diploma mill scandal broke and the board rescinded the licenses of many graduates of two schools found guilty of selling diplomas. It is to the credit of the State of Missouri that the courts revoked the licenses of these two schools. In addition to this public service Dr. North was president of our Association in 1925, president of the St. Louis Medical Society in 1921 and a member of the council of that society in 1924 and is now a member of the Council on Medical Education and Hospitals of the American Medical Association. He was president of the Medical Association of the Missouri Pacific Railroad in 1931-1932. He has been a delegate to the American Medical Association since 1923. For many years he has been a member of the board of trustees of Lindenwood College at St. Charles.

Dr. Peter T. Bohan, vice president of the board, is one of the most successful internists in Kansas City. He is professor of clinical medicine at the University of Kansas Medical School and has served his local medical society in many directions. He was elected president of the Kansas City Southwest Clinical Society in 1932.

Dr. William T. Elam has been an enthusiastic member of the Buchanan County Medical Society and the State Association for many years. He has served his county society as president and for a number of years has been Councilor of the Second District. He is now a member of the Committee on Public Policy of the State Association.

Dr. Elmer T. McGaugh served as a member of the State Board of Health from 1925 to 1927 when he resigned this position to become superintendent of the State Hospital at Fulton. He held this office until he resigned to return to private practice at Richmond.

Dr. Charles E. Hyndman, St. Louis, was appointed to the State Board of Nurse Examiners to succeed himself. Dr. Hyndman served as a member of the Council of the St. Louis Medical Society in 1924 and has been chairman of the Defense Committee of the State Association since 1921.

The State Eleemosynary Board has made several changes in the superintendency of state hospitals. Dr. Emmett F. Hocker, superintendent of the State Hospital at Farnington, will continue in that capacity. Dr. F. M. Grogan, superintendent of the hospital at Nevada, was named superintendent of the hospital at St. Joseph, and Dr. George A. Johns, superintendent of the hospital at St. Joseph, was appointed superintendent of the St. Louis City Sanitarium. Dr. R. P. C. Wilson, Platte City, was appointed superintendent of the Missouri State School at Marshall, a position which he held for many years, and Dr. S. A. Newman, Cassville, was named superintendent of the State Sanatorium at Mount Vernon. Dr. R. C. Fagley whose term as superintendent of the St. Louis City Sanitarium expired June 1 has been named superintendent of the State Hospital at Fulton, and Dr. T. R. Frazer who had been acting superintendent of the Fulton hospital will go to Nevada as superintendent of State Hospital No. 3.

In St. Louis Mayor Dickmann has appointed to positions of importance in the administration of the health activities of the city physicians who have been identified with organized medicine for many years and who have earned the respect and confidence not only of their fellow practitioners but of their friends and associates in the lay field.

Dr. Ralph L. Thompson was appointed hospital commissioner to succeed Dr. Curtis H. Lohr who had served in that capacity since 1929. Dr. Joseph F. Bredeck succeeds Dr. Max C. Starkloff as city health commissioner. Dr. Starkloff had served as health commissioner for thirty-two years.

Dr. Thompson is a graduate of Harvard University Medical School and came to St. Louis in 1904 as professor of pathology at the St. Louis University Medical School and remained as director of the department of pathology and bacteriology for nineteen years. He served on the first hospital board in St. Louis. Dr. Thompson is at present director of the National

Pathological Laboratory of St. Louis, emeritus professor of pathology at the St. Louis University School of Medicine, councilor for the Twentieth District of the Missouri State Medical Association, pathologist to the DePaul and Missouri Pacific hospitals and consulting pathologist to the Shriners' Hospital for Crippled Children.

Dr. Bredeck is a life long resident of St. Louis. He received his medical degree from Washington University School of Medicine, a degree of doctor of public health at the University of Pennsylvania, and is a graduate of the Trudeau School of Tuberculosis at Saranac Lake, New York. From 1920 to 1925 Dr. Bredeck was tuberculosis controller and assistant health commissioner of St. Louis, resigning that position to continue his studies at Hamburg, Berlin and Vienna.

Other appointments in St. Louis are Dr. Avery P. Rowlette to succeed Dr. Walter G. C. Kirchner as medical director of the City Hospital; Dr. G. D. Kettelkamp, reappointed superintendent of Robert Koch Hospital, and Dr. John Eschenbrenner, head of the Isolation Hospital. Dr. Oral S. McClellan, Negro physician, was named head of the City Hospital No. 2 for Negroes.

FEDERAL RULINGS ON PRESCRIPTIONS

New regulations for the prescribing of whiskey became effective May 15, 1933, by Regulations 2 of the Bureau of Industrial Alcohol. By these regulations physicians may use, as originals, both the original and the duplicate copies of prescription forms 1403, thus, instead of a book containing 100 only, it will contain 200 prescription blanks.

While the Federal regulations permit the prescribing of medicinal liquor in quantities exceeding one pint, the Missouri law allowing that privilege does not become effective until July 25, 1933. Therefore, until July 25 Missouri physicians are not allowed to write prescriptions for more than one half pint of alcohol, or one pint of whiskey, brandy, gin or rum, or one quart of wine. After July 25, the physician may prescribe any amount that in his judgment is required by the patient for 30 days or less. The prescription then must state the frequency and quantity of the dose as well as the period of time the liquor is intended to last. In unusual circumstances the physician will be allowed to prescribe from 31 to 99 days' supply but in such cases he must endorse "Special" on the prescription and notify the supervisor within twenty-four hours.

The present laws of Missouri make no restrictions as to prescribing one pint in ten days, therefore, physicians may, under both state and Federal law at this time, write prescriptions with such frequency as their professional judgment dictates.

Liquor prescriptions now expire seven days after writing instead of three days as heretofore.

Until July 25 there will be no change in the reports which physicians and druggists are required to make to the clerk of the county court and no change is made in the keeping of records by physicians.

NEWS NOTES

Dr. Logan Clendening, Kansas City, delivered an address at the annual meeting of the American Association of the History of Medicine at Washington, D. C., May 8. His subject was "The Little Chap."

Dr. William F. Hardy, St. Louis, was the guest of the St. Clair (Illinois) County Medical Society in East St. Louis May 4 and delivered an address on "Ophthalmological Problems of General Practice."

Among speakers at an institute on mental hygiene held at the Jewish Hospital, St. Louis, on May 15, 16 and 17, were Drs. Charles W. Thierry, Archie Carr, William Nelson and James Lewald, St. Louis.

Dr. John R. Caulk, St. Louis, was elected president of the American Association of Genito-Urinary Surgeons at the annual meeting held in Washington, D. C., May 10. Dr. Caulk previously had served as vice president of the organization.

Dr. Harry E. Mock, Chicago, was the guest of honor at a dinner given by Dr. J. Curtis Lyter, St. Louis, on May 5 at Glen Echo Country Club, St. Louis. Dr. Mock delivered an address on "The Treatment of Cranial and Cerebral Traumatism."

Dr. J. Curtis Lyter, St. Louis, was a guest of the Union County (Illinois) Medical Society at Anna, Illinois. April 20. Following a dinner given by the society Dr. Lyter delivered an address on "The Problem of Diseases of the Coronary Arteries."

Dr. Evarts A. Graham, St. Louis, was a guest of the Arkansas Medical Society at its fiftieth annual meeting which was held in Hot Springs, May 2, 3 and 4. Dr. Graham delivered an address on "A Consideration of the Factors Influencing Mortality in Acute Emyema."

Dr. M. Pinson Neal, Columbia, was the guest of the staff of the Freeman Hospital, Joplin, on May 11. He delivered two addresses, one on "Types of Anemia, Their Diagnosis and Differential Diagnosis With Their Blood Findings," the other "The Leukocyte Reaction in Acute Infection."

The fifth international postgraduate course of the Tomarkin Foundation, Locarno, Switzerland, will be held at St. Moritz, Switzerland, August 13 to 27. Subject matter of lectures to be presented will include allergic diseases, diseases of the blood, climatology, rheumatism and arthritis, and diseases of metabolism.

Dr. B. J. McMahon, St. Louis, will deliver an address at the annual meeting of the American Laryngological, Rhinological and Otological Society to be held in Chicago, June 8, 9 and 10. His subject will be "The Spread and Phagocytosis of Particulate Matter in the Mucous Membrane of the Rabbit."

Dr. Urban J. Busiek, Springfield, will be the guest speaker at the monthly hospital clinic of the Kansas City Southwest Clinical Society to be held at the Children's Mercy Hospital, Kansas City, June 13. Dr. Busiek will speak on "Pyloric Stenosis." Dr. Harry M. Gilkey, Kansas City, is chairman of the session.

The Ear, Nose and Throat Club of St. Louis has elected the following officers: Acting president and senior member of the executive committee, Dr. L. W. Dean; secretary, Dr. B. J. McMahon. The club meets on the third Wednesday in February, April, October and December in the University Club building.

Dr. C. S. Austin, Carrollton, recently presented 1250 copies of the *Journal of the American Medical Association* in bound form to the medical library of Washington University, St. Louis. The journals cover the period from 1909 to 1932. In addition, Dr. Austin gave a number of old medical volumes dating back as far as 1838. These old books were from the library of Dr. Austin's grandfather, Dr. John S. Williams, the first physician to locate in Chillicothe.

The Kansas City Urological Society has elected the following officers for the ensuing year: President, Dr. Oscar Davidson, Kansas City, Kansas; vice president, Dr. Julius Frischer, Kansas City, Missouri, and secretary, Dr. Irwin S. Brown, Kansas City, Missouri.

Dr. Edgar Allen, Columbia, dean of the University of Missouri School of Medicine, was the guest of the Kansas Alpha Chapter of Alpha Omega Alpha at the Bell Memorial Hospital, Kansas City, Kansas, May 12. He delivered an address on "Recent Development in Our Knowledge of Reproduction."

Dr. David P. Barr, St. Louis, was the guest of the Iowa State Medical Society at its 82nd annual meeting which was held in Des Moines, May 10, 11 and 12. Dr. Barr conducted a medical clinic and delivered the Address in Medicine, his subject being "The Functions of the Anterior Lobe of the Hypophysis."

Dr. Warren R. Rainey, St. Louis, will deliver an address on the scientific program of the thirty-fourth annual meeting of the American Proctologic Society. The society will convene in Chicago June 12 and 13 with headquarters at the Stevens Hotel. Dr. Rainey's subject will be "Observations of the Anus, Rectum and Rectosigmoid in Acute Syphilis."

The Chicago Medical Society will maintain a booth for the convenience of visiting physicians in the Hall of Science Building in Group K of the Century of Progress Exposition being held in Chicago this summer. At this booth visiting physicians will be given information and assistance in regard to points of interest at the Exposition. The Woman's Auxiliary of the Chicago Medical Society will assist the wives and daughters of physicians.

Dr. Dudley S. Conley, Columbia, professor of surgery in the University of Missouri School of Medicine, has been appointed dean of the school to succeed Dr. Edgar Allen who has tendered his resignation to become effective at the beginning of the next school year. Dr. Conley became a member of the faculty of the University of Missouri School of Medicine in 1919 going there from the faculty of Columbia University College of Physicians and Surgeons from which he had received his medical degree in 1906. Dr. Allen has resigned to go to the faculty of the Yale University School of Medicine. This year will complete his tenth year at the University of Missouri.

Dr. Quitman U. Newell, St. Louis, was a guest of the Black Hawk (Iowa) County Medical Society at Waterloo, Iowa, April 18, and delivered an address on "The Treatment of Uterine Cancer: A Review of the Five-Year Cures at Barnes Hospital." On May 2 Dr. Newell was a guest of the Daviess County (Kentucky) Medical Society at Owensboro, and spoke on "The Diagnosis and Treatment of Uterine Cancer: A Plea for Early Recognition."

The Missouri State Dental Association held its annual meeting in St. Louis, May 15, 16 and 17, with headquarters in the Hotel Jefferson. At an open meeting on dental health on the first evening, Dr. Joseph F. Bredeck, Health Commissioner of St. Louis, delivered an address on "Teeth and Health" and Dr. E. V. McCullum, Baltimore, spoke on "Relation of Nutrition to Dental Health." Dr. Irl B. Krause, Jefferson City, spoke during the session on "Professional Teamwork" and Dr. Daniel L. Sexton, St. Louis, spoke on "The Relation of Dental Affections to Systemic Disease."

Metabolic disorders will be the theme of the 1933 Graduate Fortnight of the New York Academy of Medicine to be held in New York City from October 23 to November 3. The theoretical, physiological and pathologic phases of metabolism as well as of certain of the associated endocrine problems will be treated in a series of round table discussions and clinical demonstrations. The latter will be presented in fifteen of the leading hospitals of New York City. A complete program and registration blank may be secured by addressing Dr. Frederick P. Reynolds, The New York Academy of Medicine, 2 East 103rd Street, New York City.

The American Medical Golfing Association, headed this year by Dr. John Welsh Croskey, Philadelphia, will hold its nineteenth annual tournament over the Blue Mound Country Club course at Milwaukee on Monday, June 12. Play will begin at 8:00 a. m. with all teeing off before 3:30 p. m. Dinner will be served at the club at 6:30 p. m. and followed by the distribution of approximately fifty trophies and prizes for the eight major events covering both 36-hole and 18-hole play. All Fellows are invited to play over the course for a practice round (on Sunday) before Monday's tournament. Fellows may play at all other courses in Milwaukee during the week. Any male Fellow of the American Medical Association in good standing is eligible for membership in the American

Medical Golfing Association on acceptance of its by-laws and payment of the enrollment fee. All communications concerning the golf tournament or enrollment should be addressed to Wm. J. Burns, Executive Secretary, 4421 Woodward Avenue, Detroit.

The American College of Physicians will hold its eighteenth annual clinical session in Chicago with headquarters at the Palmer House, April 16 to 20, 1934. Dr. George Morris Piersol, Philadelphia, is president of the college and will arrange the program of the general sessions. Dr. James B. Herrick, Chicago, has been appointed general chairman of local arrangements and will be in charge of the program of clinics. Mr. E. R. Loveland, Executive Secretary, 133-135 S. 36th Street, Philadelphia, is in charge of general and business arrangements and may be addressed concerning any feature of the forthcoming session.

Sir Henry Dale, M.D., London, director of the National Institute for Medical Research of England and one of the world's leading authorities on pharmacology, was the principal speaker at the dedication of the Merck Research Laboratory, Rahway, New Jersey, April 25. Dr. Dale was knighted in 1932, made commander of the British Empire in 1919, a Fellow of the Royal Society in 1914 and is a Fellow of the Royal College of Physicians.

Other guests at the ceremony were Mr. Lamot du Pont, president of the E. I. du Pont de Nemours & Company, Inc., chairman of the board of General Motors, Inc., and president of the Manufacturing Chemists' Association; Mr. J. K. Lilly, chairman of Eli Lilly and Company; Surgeon General Hugh S. Cumming, United States Public Health Service, and Honorable A. Harry Moore, governor of the State of New Jersey. More than three hundred leaders in medicine and chemistry in this country were present at the dedication.

The Merck Research Laboratory, just completed at a cost of \$200,000, is considered one of the most modern of its kind in the world.

INCIDENCE OF RINGWORM OF FEET IN A UNIVERSITY GROUP

Robert L. Gilman, Philadelphia (Journal A. M. A., March 11, 1933), examined, during the spring of 1932, 500 consecutive men students taking the regular prescribed gymnasium course and 285 women students. In the two groups 60 per cent of the cases were positive among the men and 57 per cent among the women. The most constant symptom among these students was the occurrence of immoderate foot sweating, an increase of 50 per cent over the noninfected group.

OBITUARY

LEWIS CARTHRAE, M.D.

Again the Stern Reaper has been among us and one of our valued members has fallen before his sickle. On March 12, Dr. Lewis Carthrae, Corder, was found dead in his office. He died with his armor on and with his face to the enemy.

Lewis Carthrae was the son of Dr. Lewis Carthrae, Sr., a pioneer physician of Lafayette County, and Ella Martin Carthrae. He was born on February 5, 1873, and at his death was a little over 60 years old.

He was educated at the Corder public schools and at Westminster College at Fulton. On leaving Westminster he went to Houston, Texas, where he was graduated in pharmacy and in 1904 he was graduated from the Kansas City Medical College. In later years he took postgraduate work in the Chicago Polyclinic and the Rush Medical School, Chicago. On completing his medical course he located at Corder and practiced there until the time of his death.

He was a member of the Presbyterian Church from early youth and later was made deacon and elder of that church and continued as such. He was an active member of the Modern Woodmen and Masonic lodges.

During the World War he entered the services of his country as a lieutenant and later was promoted to a captaincy and at the close of the war he was in charge of the camp hospital at Camp Dick, Dallas, Texas.

He is survived by his wife, Mrs. Ella Mal-lonee Carthrae, his mother and a sister.

The committee has the feeling that Lewis Carthrae was much underrated by his casual acquaintances. To those who knew him well he was a man who possessed all the attributes of a moral, cultured and educated gentleman. A physician of many years' experience stated a few years ago to a member of the committee that in his wide contact with members of his profession he had never met a more perfect gentleman and ethical physician than Lewis Carthrae. He was in no sense conceited but he possessed the culture and ability that would have made him a success in any place he might have chosen to be. A fault of Dr. Carthrae, if such could be called a fault, was that he himself did not put a higher estimate on his own ability and worthiness.

He was ethical and anything that was not honorable in his dealings with his patients and fellow practitioners was entirely foreign to his

nature. The committee has never heard a single criticism of his ethical conduct by any physician.

Dr. Carthrae lived with his parents all his life, his father preceding him in death about four years. An outstanding characteristic of him was his loyalty to his parents and the tender care that he bestowed upon them at all times, to his mother even to the time of his death at the age of 60 years.

Another characteristic of Dr. Carthrae was his ability to forget that he was a doctor and to step outside of his profession and be a real companion and friend. Few of us knew how conscientious he was or how companionable he could be. It can be truly said of him that "he lived by the side of the road and was a friend to man."

He was not tortured by that "vaulting ambition that o'er leaps itself and falls on the other side." He wished to succeed but always with honor untarnished, and this he did.

In closing, our tribute to him cannot be better expressed than in the lines of Halleck:

"Green be the turf above Thee,
Friend of our better days,
None knew Thee but to love Thee,
None knew Thee but to praise."

Necrology Committee, Lafayette
County Medical Society.

DAVID ROBERT GRIFFITH, M.D.

Dr. David R. Griffith, Creighton, a graduate of the Kansas City Medical College, 1882, died at his home March 22, aged 79 years.

Dr. Griffith was born near Young's Chapel, Jackson County, a member of one of the county's first families. While yet a young man he went to Rose Hill and read medicine with Dr. Thornton, later continuing his studies in the Kansas City Medical College. He began his practice in Dayton and after a year moved to Creighton. He later practiced in Clinton and Bates City but returned to Creighton.

Dr. Griffith remained in active practice until late summer in 1931 although he had not been in good health since 1929, and was an enthusiastic member of organized medicine. In 1929 he was elected an Honor Member of the Lafayette County Medical Society.

He had a kindly and sympathetic nature both in the sick room and in his social contacts. Men and women, old and young, found in him a ready listener to their troubles as well as to their physical ailments. He counted himself passing rich in friendships.

A half century of service as a country doctor is within itself a tribute to this man of the old

school. No paved roads nor automobiles, but country lanes sometimes packed with mud and snow and either on horseback or in a buggy were his mode and method of travel. Through rain and sleet and wintry winds he hurried with his medicine and what was often better, a geniality of spirit that was as effective as his medicine was curative. It was not the lure of money because there often was small or no remuneration, but more the love of people, regardless of creed or name that kept him true to the unswerving principle of his high duty.

He is survived by his widow, Mrs. Virginia Bates Griffith, one daughter and six sons, two of whom are physicians, Dr. E. M. Griffith, Creighton, and Dr. George Griffith, Garden City.

FRED J. HATCH, M.D.

Dr. Fred J. Hatch was born at Peru, Kansas, November 3, 1878. He was a son of Fred C. and Samantha Hatch. He attended school during his boyhood days at Peru and worked his way through Baker University of Baldwin, Kansas, where he graduated. He also worked his way through the University Medical College of Kansas City, Missouri, receiving his degree in medicine in 1905.

He began to practice in Kansas City as a general practitioner and surgeon. He was a skillful surgeon and was quite successful in major surgical operations. He was a conscientious student and led a very busy professional life. He was a staff member of St. Mary's Hospital. He was a member of Ivanhoe Masonic Lodge and Sanford Brown, Jr., Post, American Legion.

He was keenly devoted to his professional work, and his life was essentially a full one. Nevertheless he never failed to have the highest medical ideals and his own work afforded an example of all that a successful medical man should attempt to realize. Dr. Hatch's personal character and high standard of professional honor, quite as much, perhaps, as his intellectual attainments and kindness, contributed largely to his professional success. He loved humanity, especially those of the medical household.

He is survived by his widow, a son and three daughters of the home, 3841 Troost Avenue.

He was a member of the Jackson County, Missouri State and the American Medical associations.

His work, though no doubt a labor of love, was nevertheless a labor and the earnest expression of his features could not fail to convey to the observer the strain under which his work

was carried on. The University Medical College of Kansas City graduated a great many distinguished medical men, but never a more earnest one than Dr. Fred J. Hatch.

He was a captain and served his country during the late war as a surgeon.

His death took place April 7, 1933, at St. Mary's Hospital. A very large audience attended his funeral, among that number many physicians. Although a physician of a quiet and retiring disposition, Dr. Hatch possessed a large circle of professional and personal friends who held him in high esteem and who now mourn his loss.—HAL FOSTER in the Jackson County Medical Journal.

HARRY B. GREENSFELDER, M.D.

Dr. Harry B. Greensfelder, University City, died at Barnes Hospital February 26 from the effects of an injury suffered in December when he fell on the ice. He was 54 years old.

Dr. Greensfelder was a graduate of St. Louis University School of Medicine receiving his degree in 1904. Previously he had attended the Marion-Sims College of Medicine. He served in the medical corps during the Spanish-American War.

He had been connected with St. Louis University School of Medicine as assistant in anatomy and had been assistant physician of the St. Louis Female Hospital and of the St. Louis Infirmary.

He was a member of the St. Louis County Medical Society and the State Association and a fellow of the American Medical Association.

He is survived by his widow, a daughter, a son, his father and a sister.

CHILDREN SHOULD ENJOY EATING

Insistence on the part of the parents that the child should eat may usher in a prolonged lack of interest in food on the part of the child. Well meaning mothers who fear that the loss of appetite will result in an undesirable loss of weight are often at fault. They create in this manner a condition usually called nervous anorexia. Loss of appetite in a child is a serious thing, maintains Dr. Henry J. Gerstenberger in part II of his article "Why Think About Eating?" in the March *Hygeia*.

In adults, there are two forms of obesity, one the real and the other the imaginary. The real obese should be concerned over their weight because often this state is the first indication of an oncoming diabetes. It is difficult for the obese person to diet because he derives so much pleasure from eating. Exercise only increases his appetite, and it is most difficult to cut down on food intake. The imaginary obese are usually members of the gentle sex who wish to be slightly less fat in one part of their anatomy than in others. For these persons only criticism is due.

SOCIETY PROCEEDINGS

COUNTY SOCIETY HONOR ROLL FOR 1933

(UNDER THIS HEAD WE LIST SOCIETIES WHICH
HAVE PAID DUES FOR ALL THEIR MEMBERS)

HONOR ROLL

Mercer County Medical Society, December 10, 1932.

Moniteau County Medical Society, January 13, 1933.

Ste. Genevieve County Medical Society, January 19, 1933.

Camden County Medical Society, January 20, 1933.

Dent County Medical Society, February 1, 1933.

Chariton County Medical Society, February 10, 1933.

BENTON-DALLAS-HICKORY-POLK COUNTY MEDICAL SOCIETY

On April 5 at 11:00 a. m. physicians from Benton, Dallas, Hickory and Polk counties met at the Humansville Hospital in Humansville. With the assistance of Dr. Guy Titsworth, Sedalia, Councilor of the 17th District, and Mr. E. H. Bartelsmeyer, St. Louis, assistant secretary of the Missouri State Medical Association, the organization of a medical society of the four counties was perfected.

Preceding the meeting Drs. A. J. Stufflebam and R. C. Nevins, Humansville, took the physicians on an inspection tour of the hospital.

The meeting was called to order at the Community Building by Dr. A. S. Johnston, Wheatland, who acted as temporary chairman. Dr. Johnston stated briefly the purpose of the meeting and the need for a medical society in the locality.

Dr. Guy Titsworth was introduced to the Society and ably and carefully outlined the procedure for the members to follow in organizing their Society.

Dr. Titsworth introduced Mr. Bartelsmeyer who presented in a very pleasing and interesting manner the principles and functions of the State Association and the aim which the local component should have. He spoke briefly on the type of constitution and by-laws that should be adopted, the requirements for membership and the election of officers and committees.

Dr. A. S. Johnston was elected president of the Society. Other officers and committees are: Dr. R. E. Harrell, Urbana, first vice president; Dr. A. J. Stufflebam, Humansville, second vice president; Dr. J. L. Johnston, Wheatland, secretary and treasurer; Dr. J. F. Roberts, Bolivar, Dr. W. O. Reser, Weaubleau, and Dr. C. H. Brown, Fairplay, board of censors; Dr. D. C. McCraw, Bolivar, delegate to the State Association meeting, and Dr. R. C. Nevins, Humansville, alternate.

Drs. Stufflebam and Nevins were hosts at a luncheon served immediately following the meeting.

The following members were present: Drs. V. H. Greenwood and G. C. Plummer, Buffalo; D. E. Ham-

mondree, C. E. Stewart, J. F. Roberts and D. C. McCraw, Bolivar; A. J. Stufflebam and R. C. Nevins, Humansville; Dr. Bennett, Lincoln; W. O. Reser, Weaubleau; C. H. Brown, Fairplay; L. A. Glasco, Hermitage; R. E. Harrell, Urbana; J. W. Murray, Quincy, and A. S. Johnston and J. L. Johnston, Wheatland.

It is the aim of the Society to maintain a standard that will be beneficial to each member and be an asset to the State Association.

J. L. JOHNSTON, M.D., Secretary.

BUCHANAN COUNTY MEDICAL SOCIETY

A joint session of the Buchanan County Medical Society and the St. Joseph Clinical Society was held in St. Joseph at the Robidoux Hotel, April 19. Dr. W. H. Minton, president of the Medical Society, presided. An elaborate banquet was served preceding the scientific program.

Dr. John R. Caulk, St. Louis, was a guest of the Society sent by the Postgraduate Committee of the State Association and spoke on "The Author's Cautionary Punch Operation for the Removal of Prostatic Obstruction." Dr. Caulk handled his subject in an instructive and pleasing manner.

Dr. Philip C. Jeans, Iowa City, professor of pediatrics at the University of Iowa, formerly of Washington University School of Medicine, was a guest and spoke on "Certain Practical Aspects of Nutrition in Childhood." This was well delivered and the truths brought out will be of great value to all the members.

An entertainment consisting of a stag smoker, a wrestling match and a general good time with plenty of Goetze Country Club and sandwiches followed the scientific program.

This was a great meeting of our Society and all the members greatly appreciated the presence and addresses of our out-of-town guests and hope they will have occasion to visit us again soon.

EMMETT F. COOK, M.D., Secretary.

CALDWELL-LIVINGSTON COUNTY MEDICAL SOCIETY

The Caldwell-Livingston County Medical Society met at Chillicothe, March 30, with Dr. C. H. Wilbur, Polo, president, in the chair. The meeting was preceded by a dinner which members of the Woman's Auxiliary also attended. Drs. O. F. Bradford and Claude J. Hunt, Kansas City, were guests of the Society.

Dr. Bradford gave an excellent discourse on "Pyelitis in Childhood," stating that there was no clinical division of the urinary infections in childhood and that they were all cases of pyelonephritis. He spoke of the various points of focal infections that are commonly known to be feeding points for cases of pyelitis and dwelt at length upon the several different entities that may symptomatically become confused with pyelitis.

A case history on acrodynia was presented by Dr. R. J. Brennan, Chillicothe. It brought forth a good discussion.

Dr. Hunt presented an interesting talk on "Thyroid Diseases" giving a simple classification of the various types of thyroid pathology with the diagnosis and treatment of each variety.

Dr. Donald M. Dowell, Chillicothe, read a paper on "Preliminary Observations on the Menstrual Cycle and Pregnancy With a Simple Pregnancy Test." He

reviewed the literature on the physiology of ovulation and pregnancy and gave a brief resumé of the present knowledge of the correlated function of the anterior portion of the pituitary gland with the function of the ovary as concerns menstruation. He explained a simple intradermal pregnancy test by the use of anterior pituitary extract.

The following delegates and alternates were elected: Dr. C. H. Wilbur, Polo, and Dr. D. M. Dowell, Chillicothe, delegates; Dr. G. S. Dowell, Braymer, and Dr. R. Barney, Chillicothe, alternates.

DONALD M. DOWELL, M.D., Secretary.

CAPE GIRARDEAU COUNTY MEDICAL SOCIETY

The Cape Girardeau County Medical Society held its annual dinner meeting in Cape Girardeau at the Marquette Hotel April 12.

Forty-eight physicians from Cape Girardeau and surrounding districts were seated at the banquet table which had been arranged by the entertainment committee, Drs. J. Howard Cochran and Wm. E. Yount, Cape Girardeau.

After the dinner the president, Dr. M. H. Shelby, Cape Girardeau, delivered an "Address of Welcome," closing by asking each man to stand and give his name and address.

Dr. Quitman U. Newell, St. Louis, and his associates, Drs. C. S. Bickel and W. C. Scrivner, were guests of the Society.

Dr. Newell delivered an address on "Diagnosis and Treatment of Carcinoma of the Uterus." The lecture was highly instructive and complete and accompanying lantern slides were of fine quality.

Following the lecture an informal discussion took place.

C. A. W. ZIMMERMANN, M.D., Secretary.

CLAY COUNTY MEDICAL SOCIETY

The Clay County Medical Society met April 27 at Liberty. Twenty-four members, wives and visitors were seated at a 6 o'clock dinner preceding the meeting. The Woman's Auxiliary met concurrently.

Dr. R. E. Sevier, Liberty, president, presided at the scientific session.

Dr. W. C. Hamilton, Kearney, a past president, was elected to full active membership without further assessment of dues.

The Society extended its felicitation to its fellow-worker, Dr. H. J. Clark, Excelsior Springs, who is recovering from a protracted illness.

Dr. C. C. Conover, Kansas City, was a guest of the Society and delivered an address on "The Pathology and Therapeutics of the Diseased Heart." All who heard the lecture were well paid for their attendance. The doctor dwelt particularly in his illustrated treatise upon the circulation within the heart muscle and complicated situations which develop in serious emergencies. Particular stress was laid on the anastomosis of the coronary vessels.

A discussion followed participated in by all members present. Dr. Conover answered many interesting and practical questions and many ideas of worth were brought out and elaborated.

The next meeting of the Society will be held in Liberty in June at the Odd Fellows Hospital.

J. J. GAINES, M.D., Secretary.

JASPER COUNTY MEDICAL SOCIETY

The Jasper County Medical Society met April 11 with eighteen members and three visitors present.

The scientific paper for the evening, "The Treatment of Varicose Veins by Injection," was presented by Dr. L. C. Chenoweth, Joplin. He gave a very clear and detailed account of the history of the treatment of varicosities as well as the injection method. The latter method was presented fully.

Discussion of the paper was opened by Dr. A. Benson Clark, Joplin, and a general discussion followed.

Dr. Lloyd B. Clinton, Carthage, reported an interesting case of bilateral polycystic kidneys.

Dr. Clark reported a similar case.

Meeting of April 18

Dr. Paul W. Walker, Joplin, reported a case of acute gonorrhea in a woman past the menopause with unusually rapid recovery.

A general discussion of the problem of the treatment and the prevention of venereal diseases followed the case report and reports of several interesting cases were given.

Meeting of April 25

An application for membership, presented by Dr. Kinney, Webb City, was read and referred to the board of censors.

Dr. A. Benson Clark, Joplin, commissioner of health and sanitation, was the principle speaker and explained the methods used by the city health department in protecting the health of the inhabitants of the city.

Dr. W. J. Stone explained the methods used in inspecting meat and its distribution in Joplin.

Mr. Charles Hixson, milk inspector, explained the inspection of dairies and told how the various grades of milk are determined.

Miss Pearl Moorman of the Duncan Laboratories, Joplin, explained the chemical content of goat's milk. In a discussion which followed, the general opinion of the physicians was that goat's milk is inferior to a good grade of cow's milk as far as its health-giving value is concerned.

It was moved that Dr. Clark summarize the papers given during the evening and submit them to the press for publication. The motion carried.

Dr. John W. Barson, Joplin, discussed the Federal inspection of meats.

PAUL W. WALKER, M.D., Secretary.

NODAWAY COUNTY MEDICAL SOCIETY

The Nodaway County Medical Society met at the office of Dr. Robert C. Person, president, in Maryville, April 14.

Members present were Drs. R. B. Bridgeman, Jr., and C. W. Kirk, Hopkins; Dr. Charles D. Humbert, Barnard; Drs. C. T. Bell, Hiram Day, L. E. Dean, W. R. Jackson, C. V. Martin, R. C. Person, F. M. Ryan and Wm. M. Wallis, Jr., of Maryville, and Dr. B. F. Byland, Burlington Junction. Guests were Drs. O. Jason Dixon and M. H. Clark, Kansas City; Dr. Ed. Miller, dentist, Hopkins, and Drs. Roy V. Canon, Jesse Miller and H. L. Stinson, dentists, Maryville.

The program was presented by Dr. Dixon and Dr. Clark who had come through the courtesy of the Post-graduate Committee of the Missouri State Medical Association.

Dr. Clark discussed "The Relationship of General Diseases to Diseases of the Eye" and gave a broad summary of typical ophthalmic findings in nephritis, diabetes, syphilis and malnutrition. His essay was well illustrated with records of case histories and numerous charts.

Dr. Dixon presented a paper on "The Management of Acute Infections of the Head and Neck" with

special attention to cavernous sinus infections. His remarks were illustrated with lantern slides of photographs and diagrams.

These papers were well received and accorded much discussion.

CHARLES D. HUMBERD, M.D., Secretary.

PIKE COUNTY MEDICAL SOCIETY

The Pike County Medical Society met March 23 at Louisiana in the Pike County Hospital.

The business session was preceded by a motion picture, "The Preparation of Biologicals," presented by Dr. J. R. Lionberger, St. Louis representative of Parke, Davis & Company.

Dr. E. A. Cunningham, Louisiana, president, called the meeting to order.

Applications of Drs. H. Miller Bankhead, Eolia, and Wm. B. Wilcoxon, Bowling Green, were presented, and upon motion seconded and carried the usual routine was dispensed with and both applicants were accepted by immediate vote.

It was decided that the quarterly meetings as held during the last year would be discontinued and meetings be held the first Tuesday in each month.

The following officers were elected: Dr. Charles P. Lewellen, Louisiana, president; Dr. C. D. Scott, Louisiana, vice president; Dr. T. Hurley Wilcoxon, Bowling Green, secretary-treasurer; Dr. T. Hurley Wilcoxon, delegate, and Dr. Charles P. Lewellen, alternate.

R. L. ANDRAE, M.D., Secretary.

WOMAN'S AUXILIARY

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

11th Annual Meeting, Milwaukee, 1933

President, Mrs. James F. Percy, Los Angeles, Calif.

President Elect, Mrs. James Blake, Hopkins, Minnesota.

WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION

10th Annual Meeting, St. Joseph, 1934

President, Mrs. Hudson Talbott, 528 West Polo Drive, St. Louis.

President-Elect, Mrs. Wm. H. Goodson, Liberty.

When members of the Auxiliary enjoy such a delightful and inspiring annual state meeting as that held in Kansas City, May 2 and 3, of this year, the one great regret is that all our state Auxiliary women were not there to share the fine program and the exceedingly enjoyable social features.

This year the chairman of the convention committee was the president of the Hostess Auxiliary, Mrs. Wilbur A. Baker, and she and her committees left nothing to be desired.

The luncheon and musicale at the Missouri Hills Country Club, May 2, with later in the afternoon the visit to the William Rockhill Nelson Museum of Fine Arts made a day of delights for the fortunate guests. The second day closed the convention with a banquet at the Kansas City Club. By testimony of all present, this was just

the right climax of the annual meeting, a perfect banquet, perfect entertainment and a most inspiring and fitting address by Dr. Estella Ford Warner, of the United States Public Health Service, Washington, D. C.

All Auxiliary women responded in their minds and hearts to Mrs. U. J. Busiek's closing words, "Accept our thanks."

Our outgoing president, Mrs. David S. Long, has the gratitude of the state Auxiliary for leading us in such a good year's work. One of her good deeds was to bring us into closer acquaintance with our president-elect, Mrs. Hudson Talbott. As chairman of the very successful Essay-Contest Mrs. Talbott made contact with every Auxiliary in the state.

EXCERPTS FROM MRS. LONG'S REPORT

Two new counties have been organized, Miller and St. Louis counties with a total of 27 members.

The last report on membership from the state treasurer shows 739 paid members.

The departments of work in the Missouri Auxiliary conform to the National with the exception of an additional one, the Essay-Contest Chairman.

The Program Chairman has sent letters to every county president urging tuberculosis education and periodic health examinations, both of which are receiving increased attention in progressive states.

Missouri continues to maintain a lead among the states in the number of *Hygeia* subscriptions having exceeded the quota assigned them by the National.

The Essay-Contest has been a very satisfactory piece of work. One of the stated objectives of the Woman's Auxiliary is the education of the laity. This year we turned our attention to the youthful laity by a very definite method, the Essay-Contest. The subject "The Prevention and Cure of Tuberculosis" was chosen.

In the senior group prizes were awarded to the following: 1st prize, \$10, to Marjorie McIntosh, Meadville, Linn County, and 2nd prize, \$5, to Lucene E. Jaeger, Kansas City, Jackson County.

In the junior group prizes were awarded to the following: 1st prize, \$10, to Wilma Jacoby, Moberly, Randolph County, and 2nd prize, \$5, to Virginia Zweers, St. Joseph, Buchanan County.

The state judges were Dr. Sam H. Snider of Kansas City, Dr. J. S. Triplett of Harrisonville, and the state president.

Ten counties had public relations meetings.

Your state president desires to express thanks to the Missouri State Medical Association for its financial support and encouragement of this project, and to express appreciation to Dr. Sam H. Snider, Dr. George H. Hoxie, Dr. J. J. Singer, Miss Martha Sander, Dr. Russell, Dr. Herbert Mantz and Dr. Morris Ginsberg who gave information and inspiration through their talks in the various communities.

The Missouri Auxiliary was asked to provide a luncheon program for the Missouri State Tuberculosis Association Convention in September, 1932, at Jefferson City, which they did. Mrs. Hudson Talbott, Mrs. M. P. Overholser and the state president presented the program.

I desire also to express appreciation to our Advisor, Dr. J. Frank Harrison, whose counsel and advice has been so freely given; to the President of the Missouri State Medical Association, Dr.

Joseph W. Love, for his friendship and cooperation, and to Dr. E. J. Goodwin, Secretary of the Missouri State Medical Association, for his support of the Woman's Auxiliary at all times.

MISCELLANY

A PLAN TO IMPROVE MEDICAL SERVICE IN RURAL COMMUNITIES

To the Editor:

After spending five years and considerable money the Committee on the Cost of Medical Care has made its final report and recommendations as to what should be done to correct the present unsatisfactory conditions. It is evident that their plan cannot be put into successful operation; if for no other reason, the majority of the medical profession as well as many others do not believe it would be good either for the patient or the doctor. Nevertheless, no one will deny that they have been considering a very important matter and that something ought to be done about it; and something will be done whether it is the right thing or not for, when it becomes necessary for a pay patient or any of his family to seek hospital care he is about bankrupt when he gets through with it while the average doctor is having a pretty hard time making a decent living.

Practicing in a rural district, I have been impressed with the great need of better and cheaper medical care for our rural population, and, also of better compensation for the country doctor. How to meet these two apparently conflicting requirements has engaged my attention for some time. The plan I have in mind is for the country, not the city.

In devising a successful plan, we must first take into consideration the conditions that must be corrected in a rural community. By a rural community I mean a county that has no town large enough to support a well equipped and well conducted hospital.

1. We find the average age of physicians in the rural counties well up toward sixty, and these are mostly in the small towns and villages leaving the outlying districts remote from any kind of medical service. Well qualified men or recent graduates rarely locate in these rural counties. This means that these rural communities will soon be worse off for medical care than they are now unless means are found that will induce qualified men to locate therein.

2. These country people are mostly honest and expect to pay their bills, but as it is, they hesitate to send for a physician as soon as they should because doctors do not feel that they can make these ten or fifteen mile trips for less than five to ten dollars; and often a number of such trips are necessary during the year. When such is the case the bill becomes quite a burden as any one may readily appreciate if he will only bear in mind that at the very low rate of five dollars a visit, with the present prices of farm products, each visit will be equal to the cash value of twelve to fifteen bushels of wheat, or sixty gallons of milk, or twenty-five dozens of eggs, or a like proportion of any other commodity that he may have to sell. And when hospitalization becomes necessary it means hard times for the family for several years.

3. Recent graduates prefer to remain in the city where they can have hospital facilities so that they can practice their profession as they have been trained. No matter how well qualified, they cannot do this in a rural district. Consequently the country doctor

must send his serious cases to the city and place them under the care of some city doctor; and when the patient gets through paying for these luxuries there is nothing left for the family physician. Moreover, it often leaves the impression in the mind of the patient that the city doctor is a superior sort of fellow and that his family doctor is a mere convenience to have around to attend to emergencies and trivial complaints.

4. If rural communities solve their medical problems they will have to make country practice attractive to men who are qualified. This I think can be done without violating any of our time-honored medical ethics, and, will at the same time strengthen the respect physicians have for each other and the esteem which the patient has for his family physician.

My plan is for the county to build and equip its own hospital, employ a house physician, an expert in roentgen ray and laboratory methods, nurses and such other help as necessary and furnish patients, while in the hospital, with food and medicine at cost. To meet these expenses, collect, along with the regular taxes, five dollars or whatever may be necessary from heads of families and half that amount from single persons who are profitably employed. If there should be any deficit, it could be supplemented by a light ad valorem tax. This would not create a burden heavy enough to be felt by any one. Most men and boys, and girls too now, spend many times as much for tobacco and cigarettes. Such an institution would be a great comfort to the average person needing hospitalization and especially to expectant mothers. No one in the county would be an hour away from the hospital.

As soon as the hospital is assured, the county medical society should organize for cooperative practice, assigning to each member special work in which he should perfect himself as far as possible while doing his regular practice; thus relieving each of the burden of trying to cover the whole medical field. The hospital would be the medical center of the county where each physician would likely have patients to see every day; and thus, if any patient or doctor wanted the best medical help the county had, it would be at hand and could be given at a price that would not be burdensome to the patient. This would be a great stimulus to better work and would remove from the country doctor the ennui of isolation and feeling of loneliness. There is no reason why there should not be just as good work done in the county hospital as in the city. A plan of this kind would offer inducements for good men to locate in communities far out from the towns and villages, as it would give them opportunity for the same kind of work they would get in the city and with less competition. Since the coming of automobiles and good roads, country practice is not the disagreeable thing it used to be, but rather a pleasant thing. If I were a young man looking for a location, I know of nothing that would be more attractive to me than a place of this kind where I would be free from the din and turmoil of the city yet could meet my fellow practitioners every day and exchange thoughts and ideas.

It would, of course, take some time to get an institution of this kind into smooth working operation. Most of the older doctors would have to drop out, as they would not fit well into a scheme of this kind, and therefore they are likely to oppose it. But since most of us old fellows are now near the quitting line, we will probably be out of the way before the plan can be put into operation.

J. W. PICKEL, M.D.,
Kirkwood, Missouri.

BOOK REVIEWS

INTERNAL MEDICINE. Its Theory and Practice in contributions by American Authors. Edited by John Musser, B.S., M.D., F.A.C.P. Professor of Medicine in the Tulane University of Louisiana School of Medicine; Senior Visiting Physician to the Charity Hospital, New Orleans, Louisiana. Illustrated. Philadelphia: Lea & Febiger. 1932. Price \$10.00.

In planning such a textbook the editor and publishers must of course select some group of readers and type of material before they can budget the contributions, or select the editors, or limit the number of pages. Apparently this textbook, the latest candidate for favor among the textbooks on medicine, is designed for the modern medical student; and also is designed as an introduction to the diseases of which students must learn more in more extensive treatises. Another reason for this belief is that the men selected as contributors are, for the most part, either salaried professors in universities or occupy similar positions in large hospitals. Their viewpoints, therefore, are quite different from those of the practitioner of medicine who meets his patients in their homes.

It was therefore a pleasant surprise to find a very comprehensive discussion of pulmonary tuberculosis by James Alexander Miller. Dr. Miller's viewpoint is well illustrated by the following paragraph on page ten: "The time has gone by when a physician was considered to have fulfilled all his entire responsibilities when he had given his best individual treatment to the patient who is ill. In the management of the individual case of tuberculosis, he has in addition the responsibility for controlling the spread of the infection to other members of the family or to other associates; for looking into the possibility of early tuberculosis in those who may have been exposed and for systematically examining all such contacts, particularly children."

On the other hand, Dr. Miller does not apparently know of the influence of chronic infection of the paranasal sinuses, either as foci of infection or as a forerunner of bronchiectasis.

Professor Fred M. Smith, of the University of Iowa, writes on the diseases of the heart, and this amounts to a small book; namely, pages 373 to 472. By avoiding historical references, especially references to the older terminology he has been able to give in condensed form a satisfactory outline of diseases of the heart. The influence of the American Heart Association is shown in his discussion because he systematically works out the etiology, the physiology, the anatomy, and function of each pathological condition. For the older physicians who have been trained in the conception of heart disease prevalent before MacKenzie or before the Great War, it is necessary, in order to understand this article on heart disease, to study it very thoroughly and get the new viewpoint. It can hardly be correlated to the older cardiology but seems to be complete in itself. Your reviewer, therefore, would commend this article to physicians as well as students who desire to secure an idea of the modern conception of heart disease and to understand why the disease is increasing in prevalence.

Your reviewer was disappointed in trying to learn something about infectious jaundice from this volume. His experience with Weil's disease and infectious jaundice would indicate that it is a much more serious disease than the author ascribes to it.

The reviewer was also disappointed in the article on fungus diseases. He fears the student will not be on the lookout for such disorders in some of the atypical respiratory and skin infections.

The book is well gotten up and well bound; but the paper tears rather too easily and the ink has a tendency to run.

G. H. H.

CORRECTION OF DEFECTIVE SPEECH. A Complete Manual of Psycho-Physiological Technique for the Treatment and Correction of the Defects of Speech. By Edwin Burket Twitmyer, Ph.D., Professor of Psychology and Chief of Corrective Speech Clinic, University of Pennsylvania, and Yale Samuel Nathanson, Ph.D., Instructor in Psychology and Assistant, Corrective Speech Clinic, University of Pennsylvania. Illustrated. Philadelphia: P. Blakiston's Son & Co. Price \$3.50.

Part I of this book is devoted to the psycho-physiological approach. When the subject of stammering is taken up in this section, the statement is made that the abnormalities in breathing constitute the nearest approach to a common factor in the lack of fluency of speech and that (in the case of stammerers at least) the origin of these abnormalities may usually be traced to some disease which manifested severe symptoms in the nasopharynx or the respiratory tract. The three basic fundamentals of normal speech, whose development constitutes the aim of the authors, are: (1) Correct breathing, (2) correct kinesthetic or muscular imagery involved in speech—designated as the "Orataus," and (3) the combination of the above two sounds. A list of 5102 "frequency words" is given, the words constituting more than 85 per cent of the ordinary vocabulary. Each word is presented to the patient only after its component sounds have been the subject of training and practice.

Part II consists of "corrective material and technique." Exercises for baby coordination and breathing exercises are indicated. These are followed by vocalization exercises and exercises for the peripheral organs of speech. Instead of vowels and consonants, sounds are divided into continuants and stops. The words and sentences constituting the material for the exercises take up the greater portion of the book—more than 300 pages.

Not the least interesting part of the book is the addenda which suggests a good psychological method for the eradication of objectionable habits, such as clearing the throat, etc.

The teachings of the authors are certainly directly opposed to the school of which Fletcher is an ardent exponent; namely, that speech exercises are contraindicated in stammering. The material is not, however, intended merely for the correction of stammering, but for all types of speech defects and, in the words of the authors, "it is not concerned with academic dispute as to etiology."

R. B.

RENAL RICKETS

According to Arthur R. Elliott, Chicago (Journal A. M. A., March 11, 1933), there exists a form of rickets developing in childhood in association with, and apparently as a result of, chronic nephritis. Other causes of persistent renal insufficiency, such as congenital cystic kidney and double hydronephrosis, may effect the same results. Bodily development is markedly retarded and, when the patient survives beyond the age of puberty, sexual infantilism may exist. Chemical studies of the blood reveal an increasing azotemia coinciding with the increasing excretory inadequacy of the kidney.

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E. J. GOODWIN, M.D., Editor
1023 Missouri Building, St. Louis, Mo.
Telephone, Jefferson 5261.

PUBLICATION { J. C. B. DAVIS, M.D., Chairman
COMMITTEE { G. WILSE ROBINSON, M.D.
M. A. BLISS, M.D.

THE PRACTICE OF MEDICINE AND INDIVIDUAL SERVICE

PRESIDENT'S ADDRESS

JOSEPH W. LOVE, M.D.

SPRINGFIELD, MO.

It is my duty as President to give a simple account of my stewardship for the last year. I want to assure you of the good spirit which obtains in the various county and district societies which I have had the privilege of visiting. I have received a number of communications from these societies and have enjoyed my visits very much indeed. I have noted a spirit of fellowship and cooperation on the part of the membership and a devotion to scientific medicine which was displayed in the papers that were read by members of the local societies, and also by addresses that were presented through the Post-graduate Committee of the State Association.

Inasmuch as the science of medicine has been brought to its present state from ancient times by a rugged individualism devoted to true methods, I feel very strongly that rugged individualism in the practice of medicine and the administration of the science of medicine by the practitioner to the public should continue on that line, and I want to assert my confidence in the ideal of the general practitioner being the king-pin in the practice of medicine. Specialism has arisen and has contributed immeasurably to the accumulation of the science of medicine, but specialism cannot render its whole duty to the public, either in preventive or in curative medicine, without the cooperation of the specialist and the general practitioner, the family physician. Upon the cooperation between these two depends the only benefit the public is to derive from medicine as time goes on.

I feel that the public derives much less benefit from state legislation in its attempts to increase the standards of medicine than from that which organized medicine itself has done. The

Council on Medical Education and Hospitals of the American Medical Association for the last twenty-five years has done immeasurably more to elevate the standards of the practitioner as we find him today than the united legislation of the various states has done. The theory of our medical legislation in America is peculiarly American inasmuch as each state prescribes its own laws and, being a restricted type of legislation, special legislation is enacted which results in the recognition of the various cults. This does not obtain in Great Britain. The British Parliament has consistently declined for many years to yield to the importunities of any of the cults to enact legislation which would recognize them in any way. A definitive form of legislation, not restricted legislation, enables them to appear in a much better light than does that which we have adopted in the United States. All we have been able to do in the past has been the gradual assimilation of the vagaries and cults of medicine, exemplified by the homeopaths, the eclectics and the like, so that they are slowly fading out of the picture. Unfortunately, there is always a new crop coming on which receives at the hands of legislators tacit recognition by what the legislators appear to deem fair play. Therefore our own reputations must stand upon the science of medicine and upon our knowledge as accumulated and practiced by the individual practitioner in his relations with the public.

A healthy cooperation between the specialist and the general practitioner, with mutual obligations and mutual concessions, is the protection which the profession will have against the rising tide of socialized medicine. It is easy to conceive that we could select talent from within the medical profession in America today and organize a staff and hospitals and administer for a while a form of treatment which would be efficient and perhaps for the time being economical. But it would have within it the virus of decay which would ultimately result in a routine practice that would destroy its efficiency and spoil for all time the inspiration

which has brought about the high standards we enjoy today in our profession.

Now and then there has been some suggestion as to extending our system of standardization by state legislation to prescribe the qualifications for specialists in the various departments of medicine. If that is ever done it seems to me that the definitive rather than the restricted method would be the ideal type; simply incorporate certain committees within our State Association that are able to pass upon the qualifications of specialists and put those specialists on the list as possessing these qualifications without any restrictions as to the practice of others. That would be on the same status as the British laws applying in the British Isles, something like the American Board for Examination and Licensure, the American Board for Ophthalmic Examinations and the like, defining, either by states or by the nation, certain qualifications, and leaving to active individual physicians their success.

I see no reason why I should attempt to recount the history of the progress of medicine from the time of Hippocrates to the present, and no reason why I should attempt to comment upon the present conditions of economics, especially as it applies to the practice of our profession. The Committee on the Costs of Medical Care has reported. Two reports have been made with two distinct recommendations and the majority of the practitioners that I have met are favorable to the minority report which is clearly stated and unmistakable. The House of Delegates yesterday passed an appropriate resolution approving the sentiment of the State Association on that question so that we will now proceed, as soon as we have heard the address of the President-Elect, with the scientific program.

I now have the privilege of presenting to you Dr. W. L. Allee, President-Elect of the Missouri State Medical Association.

In a protozoal survey of 1,000 inmates at San Quentin Prison, H. G. Johnstone, N. A. David and A. C. Reed, San Francisco (Journal A. M. A., March 11, 1933), observed infestation with *Endamoeba histolytica* in 9.2 per cent. Seventy-eight of the ninety-two men with *E. histolytica* infestation lived in or had visited areas in which it is well known that amebiasis is endemic, and thirty-six of these had lived in tropical regions at one time. Fifty-two men had experienced notable gastro-intestinal upsets, twenty-eight having complained of indigestion, sixteen of diarrhea or dysentery, and twenty-three were bothered with constipation when examined. Thirty-nine men stated that they did not have gastro-intestinal complaints. Of these, twenty-seven were under 30 years of age and in most cases had only recently been to endemic areas.

ORGANIZED MEDICINE THE BEST WEAPON AGAINST SOCIALIZED MEDICINE

ADDRESS OF PRESIDENT-ELECT

W. L. ALLEE, M.D.

ELDON, MO.

In this time of world crisis and social discontent the pressure toward socialized medicine and placing physicians on a salaried basis becomes more persistent. However, we can assume that the great majority of physicians still persistently maintain and support the principle that the practice of medicine is an individual responsibility, the individual to be free to choose his own physician and the patient should compensate his physician in proportion to the services rendered. I believe that many of us are of the opinion that there are entirely too many doctors influenced by the sentiment that almost anything would be better than the present conditions and are lending a sympathetic ear to the enticements of a determined regular monthly or annual fee for services thus divesting the doctor and patient of any guise of personal relationship. About the only effective weapon against this trend to socialized medicine is a healthy, wholesome state organization with its component county and city societies. The state organization is dependent upon its various committees for effective results and the committees can function properly only by having a full and active membership.

We have all had an increase in our charity cases and we have all made concessions in our usual fees which have seriously impaired our earnings. With the addition of delayed collections we naturally look about for ways of paring expense. Under these conditions it is human, wise and for most of us compulsory to economize. Unfortunately, many of us do not evaluate very thoughtfully the various items selected for paring. There will be some doctors that will try to balance their budget by paring their membership to the State Association and forget to economize in the number of fraternal and social orders, not to mention the quasi social organizations, that are supposed to be so necessary to properly animate Main Street. I mention this because I am one of these joiners and know the drain in the course of a year and also know that the dues to the State Association are but a few cents more a month than the price of one of the almost weekly luncheon tickets we are called upon to purchase by some local committee. Why not select some small item once a

Read at the 76th Annual Meeting of the Missouri State Medical Association, Kansas City, May 1-4, 1933.

month for elimination rather than our state membership dues which are but sixty-seven cents a month? This small stipend we pay cares for all the activities of the Association including the defense and postgraduate funds, the legislative fund and a splendid monthly journal. We have no special assessments which in most organizations are more than our annual dues.

I realize the fact that most of our members appreciate and accept their responsibility to organized medicine but every profession has some members with backsliding tendencies who are careless and indifferent and are willing to share the protection and influence of a great organization but refuse to contribute with time, effort or dues. I have tried briefly to suggest a trend that would upset and disturb long established relations of the physician and his patients through hospital insurance schemes, social service workers and quasi medical and lay racketeering organizations with their various health uplift schemes. Our only line of defense or offense is a strong state organization. By all means let us maintain our membership and aid in every other possible way our various committees who give so generously of time and effort for improving and strengthening our Association for our benefit and protection.

USE OF DRINKER RESPIRATOR IN THE AFTER-CARE OF INFANTILE PARALYSIS

According to Arthur T. Legg, Boston (Journal A. M. A., March 4, 1933), the use of the respirator in the acute stage of infantile paralysis has saved the lives of many patients with respiratory involvement. Not only was the mortality of infantile paralysis with involvement of the muscles of respiration much greater before the invention of this machine but many of those who survived died subsequently with some lung disease resulting from diminished aeration. Having seen these patients with deformed chests and having seen demonstrated what the respirator would do in the acute stage, the author conceived the idea of using the respirator as an exerciser after the need for its use to maintain life had passed. Measurements of voluntary expansion of the chest, taken on a series of patients who received regular daily treatment in the respiration machine over a period of months, showed a definite and steady increase from amounts under one half inch up to two and three inches of voluntary expansion away from the machine. It was noticeable that this expansion was produced mainly by the intercostal muscles as in a normal person, without the excessive use of the accessory muscles of respiration, such as the sternocleidomastoids, which, if present, were strikingly used at first. From a medical standpoint, the increased aeration of the lungs and the deeper movement of the diaphragm in the abdominal cavity resulting from the use of the respirator should be an aid to the general health of the patient, in addition to its value in preventing deformities of the chest and in aiding the return of power to the muscles of respiration.

THE TUBERCULOSIS PROBLEM IN MISSOURI

METHODS AND MEANS FOR ITS BETTER CONTROL

SCOTT P. CHILD, M.D.

MT. VERNON, MO.

INTRODUCTION

With the etiology, pathology, symptomatology and communicability of tuberculosis known and in our hands for fifty years; with the basis of treatment for the disease found in the simple and always available remedy, rest, possessed and used as a practical system for the same period, it may seem strange that so much time and thought are still devoted to this disease. However, since it is a fact that more people die today from tuberculosis between the ages of from 15 to 40, the productive period of man's life, than from any other cause or specific disease we are impressed with the reality of the problem, and that society should handle it more efficiently. Even though due to a specific and insidiously working microorganism whose normal habitat is man the disease is preventable. New infections need not occur. The established, active, clinical case of tuberculosis can be avoided.

The subject as formulated justifies a comprehensive and intensive presentation. It is hoped, however, in view of the limited time at our disposal and the period in the history of tuberculosis work in this state, that points may be presented for discussion which will prove of practical assistance in the fight now being waged.

That tuberculosis is still a major health problem in Missouri is not open to argument. Pride if nothing else should bring the State and all those interested in improved health to a realization of the facts about our position in the Mississippi Valley Conference Area in relation to the mortality from tuberculosis. There are in this conference area twelve states, as follows: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota and Wisconsin.

For comparative and statistical purposes, there will be selected from this group five states, namely, Illinois, Michigan, Minnesota, Wisconsin and Missouri, and data given on the number of new cases of tuberculosis reported for the year 1931, the number of deaths therefrom and the death rates for each state for such year. The ages of these states, the variety and

Read at a state tuberculosis conference, Kansas City, Mo., May 1, 1933, called by The Missouri Tuberculosis Association, other agencies cooperating.

nationality of their population, the character of soil, climate and waterways, the natural resources and the presence of one or more large municipalities, make these states quite comparable.

The first and important fact for us however is that with a like history in the knowledge possessed about tuberculosis, with established state, county and municipal departments of health, with institutions for teaching modern medicine, with thoroughly qualified men in the medical profession and with clinics and sanatoria for the care of the tuberculous, Missouri stands twelfth, the highest, in the mortality rate from tuberculosis, in such area. For the year 1931 Minnesota had a death rate of 41.1 per 100,000; Wisconsin 48.7; Michigan 53.3; Illinois 61.3; Missouri 71.87. In 1932 the death rate in Illinois fell to 55.2; in Wisconsin to 45; while Missouri's was still 71.

In Missouri, with a population of 3,629,367, there were in 1931, 2,622 deaths from tuberculosis. St. Louis, our eastern and largest metropolis with a population, white and black, of 832,700, had in 1932, 691 deaths from tuberculosis; this a mortality of 82.9. Kansas City, with a population of approximately 450,000 including 40,000 Negroes had in 1930 a death rate of 88.54. Chicago, Illinois, with a population of 3,376,438, and with a large Negro, Mexican and foreign population, had in 1931 a mortality of 66.4, while Illinois with a population of 7,718,000 had a rate of 62.2. Both Chicago and Illinois are doing intensive work in tuberculosis control.

Along the Mississippi River, on the Missouri side are 16 counties, including St. Louis City and St. Louis County. The mortality for such group of counties along a large and changing waterway, was 66.24 per 100,000 for 1930. Bordering both banks of the Missouri River as it courses across the state dividing it into two sections north and south, are 22 counties including Kansas City and Jackson County. This Missouri River section had in 1930 a mortality of 41.73, Kansas City being rated at 88.54. In the eleven counties on the south bordering the state of Arkansas, with rocky hills and largely undeveloped land and with an old "poor white" population, the death rate for the same year, 1930, was 67.36. On the Iowa or northern border there are 9 counties. The land is agricultural, the population largely rural and of good social status. Here in 1930 the mortality was 29.92.

Nationality, intelligence, the varying densities of population; soil, climate and character of enforced environment, including housing and food supply, all have their effect upon the mor-

bidity and mortality of any disease, especially so with tuberculosis. Where there are poor economic conditions and consequent malnutrition the morbidity rises. If such conditions exist plus an absence of attending scientific direction and unorganized social machinery, the death rate rises still higher. In our large cities the century old ghettos and tenement districts are complications that maintain high mortalities. The housing conditions of our large cities being insanitary and long continued help to explain in Missouri the rate now credited to us.

TUBERCULOSIS WORK AS NOW CARRIED ON IN MISSOURI

In comparison with other states having the same tuberculosis problem it is acknowledged that Missouri is not as well organized as it should be. Our statistical data are not complete. A comprehensive survey of tuberculosis in the state has not been made. The number of cases of childhood tuberculosis and the number of active and open adult cases are not only inaccurate but relative; legislation dealing strictly with the problem of tuberculosis is very meager. Certain city governments, as St. Louis, have established tuberculosis divisions in their departments of health and are doing good work. But such instances are isolated. The various tuberculosis associations, state and municipal, are working locally and upon particular phases of the problem. A few counties scattered about the state have health officers who are on the job and know where the tuberculous cases are. But there are still many counties with little if any data about those suffering with the disease.

For administrative and practical purposes, Missouri is divided into 114 counties and the City of St. Louis, each one having its own needs and its tuberculosis problem. Of interest to us is the fact that 13 of these counties have authorized and paid full time health officers. One half of the counties, or 57, have part time health officers who give a portion of their services to public health matters, including tuberculosis. There are, in addition and separate from the health units, 14 counties having paid nursing service, recognized as of distinct but limited aid to the wide problem of tuberculosis.

In the large cities of the state, namely, St. Louis, Kansas City, St. Joseph, Columbia and Springfield, there are being conducted "chest clinics," by the respective health departments. Likewise do a certain number of the county health units throughout the state support such clinics. Such in the past have proved of great value in locating, diagnosing and directing for treatment cases of tuberculosis. It is probable that every county in the state should be so

served, either by an established or a visiting chest clinic.

The Missouri State Tuberculosis Association has organized and held "case finding" clinics in 28 counties and thus found many a case of tuberculosis which would have been overlooked and remained uncared for and a menace to the uninfected. In addition the association has carried on a campaign of education through the distribution of literature on tuberculosis to large groups of teachers, nurses and doctors throughout the state.

One of the most important and truly constructive pieces of tuberculosis work in Missouri is that being done by the sanatorium system of hospitalization. Here patients are put on continuous rest, given special and surgical treatment as indicated, taught how to live, and on discharge become missionaries and teachers among the many out in society still suffering with or exposed to active disease. There are in Missouri eleven sanatoria, 6 public, 3 private and 2 institutional. The State Sanatorium, located at Mt. Vernon in the Ozarks, has a capacity of 360 beds, usually filled and with a waiting list. Koch Hospital in St. Louis with 500 bed capacity is the largest in the state. St. Louis City, St. Louis County and Kansas City have several other well equipped and well organized sanatoria. In addition, there are a few other counties which under state law have raised funds and built for their own needs small but very serviceable sanatoria. Such are the counties of Greene, Jasper and Buchanan.

THE STATE'S NEEDS AND A SUGGESTED PROGRAM

After thus taking stock of our state tuberculosis problem, the present personnel in active service and the armamentarium at our disposal and in use, the question arises as to our needs to more adequately meet the conditions as they exist. In any enlarged or new program which may be considered there are certain fields or divisions of work which must be formed or better established, and such will be presented for your consideration and discussion, viz.: (I) Education. (II) Case finding. (III) Clinic and nursing service. (IV) Institutional or sanatorium care. (V) Rehabilitation or follow-up system. (VI) Legislation.

I. EDUCATION

It is acknowledged that the basis of any progress in human endeavor has been through education, the continued acquisition and dissemination of facts and opinion revealed by history, research, observation and experience. This in its application to the tuberculosis problem is very apparent. There are groups of people, and very important groups, related to

public health and its tuberculosis division who possess little specific knowledge as to the recognition, prevention and care of this disease. Reference is made to the general medical profession, the medical student still in school and the general public. This statement is presented with full knowledge of its implication. And such opinion is being impressed more deeply every day upon those who are doing special work in tuberculosis and are constantly associated with it. And it is said without any spirit of criticism of anybody, save the silent tuberculosis worker and the unawakened state government.

A. THE EDUCATION OF THE GENERAL PROFESSION IN DIAGNOSIS AND TREATMENT OF TUBERCULOSIS

Today, with the great advance made in diagnostic methods and technic in disease, it is realized how much the general profession needs education in the modern methods of diagnosis and treatment of tuberculosis. Scarcely a day goes by in the office of an internist or phthisiologist, or in the examining or conference room of a sanatorium, but there is found evidence of delayed or incorrect diagnosis in one far advanced in pulmonary tuberculosis. Perhaps six months or even two years have gone by with diagnosis of "flu," bronchitis, pneumonia, typhoid or malaria, when a few diagnostic procedures would demonstrate the facts, save time and expense and perhaps put the patient on the way to recovery from his specific and chronic tuberculosis, long established but not recognized.

Rather than criticise the general medical profession, hard worked and often isolated from laboratory and clinical facilities, they should have brought to them directly the more recent and accepted methods and technic in diagnosis. To say that every doctor should go away for postgraduate study and thus keep up with diagnosis is beyond the point. Some can afford it, are ambitious and go; but many are unable to do so. As a result too often an advanced and open case of tuberculosis persists, children and young adults are exposed and infected and tuberculosis, a contagious and preventable disease and one possible of early diagnosis, continues its infective course unhindered.

A perfectly practical plan to meet this need and situation is for a lecture course on the essentials of diagnosis in childhood and adult tuberculosis to be established and given throughout the state before groups of physicians in councilor districts or county seats by members of the profession doing special work in tuberculosis. A volunteer corps of qualified physicians from the larger clinical centers, as

St. Louis and Kansas City, from the state and county sanatoria staffs and from the medical faculty of the state university, would offer a sufficient and prepared group of lecturers. In fact, a considerable number already counseled with have offered their services.

The course of lectures on tuberculosis of the lungs instituted by the St. Louis Department of Health for the general medical profession of that city is an example of what is needed. Such a course modified according to local needs could, under a directing committee, be extended and meet the demands of the whole state. With even a small field staff it might, as has been suggested, be planned and conducted by the superintendent and assistant physicians of the State Sanatorium, others being selected from the trained men in the other sanatoria and the medical schools of the state.

B. MEDICAL STUDENTS

It is a regrettable fact that too few students graduating in medicine are specifically instructed in or have first hand knowledge about the history, clinical course, diagnosis and treatment of tuberculosis. A few medical schools, recognizing its importance, have special courses in such disease. As the medical schools of this state do not give an important position to the subject it is for us to carry such problem to them urging its practical consideration in their curriculum.

C. EDUCATION OF THE GENERAL PUBLIC

It is of course among the masses of society and in our homes where dwell the parents and their children and out among industrial workers, that tuberculosis largely arises. In a practical and nonsensational manner knowledge about this disease must be carried to them. In America we have a very remarkable school system with its allied parent-teacher's association through which all homes can be reached; also thousands of the industrial group can be found in factory and shop.

The theatre, the movie, the radio and the press as well as the family physician, the nurse and social worker, can directly reach all society needing information and advice upon and protection from tuberculosis. The knowledge about this disease and its prevention is possessed by the medical profession, the various departments of health and the tuberculosis associations. Such knowledge should be formulated and simplified and means for its transmission be arranged. The public will gladly receive it.

D. RESEARCH

The great contributions of Pasteur and Koch to whom we are so indebted for our present

knowledge of bacteriology and of tuberculosis were dependent primarily upon "research." This is a field of education and a source of knowledge that Missouri with other states must give more time and thought to. Pennsylvania, New York, Minnesota and Michigan, have men and institutions carrying on special investigation and original work in tuberculosis which will eventually assist in the better control of such disease.

There is much yet to learn of the morphology and chemistry of the tubercle bacillus. Who knows the true relation of bovine, avian and human tubercle bacilli? What is the true significance of immunity, allergy and the tuberculin reaction? What is the relation of primary childhood infection to adult pulmonary tuberculosis, or consumption? Are most cases of active parenchymal tuberculosis endogenous or exogenous in origin? Is the unfavorable prognosis in the infected Negro and Mexican coming into the United States due to racial tissue characteristics or to the enforced and unfavorable environment to which they are here subjected? What is fundamental in nutrition? Why is pasteurization of milk a necessary method in its production? Who among the active parenchymal cases need collapse therapy? When is thoracoplasty indicated?

Special research and thorough investigation alone can answer these questions.

II AND III. CASE FINDING

There were reported to the Missouri State Department of Health for 1931, 2,622 deaths from tuberculosis. Of course, neither the exact number of infections nor the number of active cases of tuberculosis is known. But experience the country over seems to justify multiplying the number of deaths by 10 to attain a practical approximation. Thus, it can be accepted that there are 26,000 persons in Missouri infected and diseased by the tubercle bacillus at this time.

The large majority of these are not registered as cases of tuberculosis. In fact, some advanced and open cases are active in social and industrial life, going on unhindered and spreading infection until a hemorrhage or an acute pleurisy checks them or takes them to a physician.

Every case of tuberculous infection and every active, open case of tuberculosis should be known, registered and under some form of supervision. In some way it must be impressed upon the state government and upon the public at large that every case of tuberculous infection and every case of clinical tuberculosis comes from another and an open case and should be under practical and legal control.

Certain states, even without a specific bureau or division of tuberculosis, are trying to locate and control all open and active cases. Other states have initiated the general tuberculin testing of children and contacts, thus being able to advise and protect the reactors against further progress of the infection and also to trace the source of many of the infected to their homes, thus finding by this procedure many new cases.

In Michigan with a large number of county and municipal health officers, there is under the present state director of health a system by which on the reported death of a case of tuberculosis the doctor so reporting is advised to investigate and report upon others in the family having positive or suspicious evidence of the disease. And in case of lack of interest or negligence on the part of the physician, the state assumes the responsibility, determining the facts.

As is known, Chadwick's original work in Massachusetts and his present position as health commissioner in Detroit are contributing vast knowledge to the field of tuberculosis. Chadwick found from 25 per cent to 33 1/3 per cent of all school children reacted to the tuberculin test, and that 2 to 3 out of every 100 in school had active adult tuberculosis. Such are the results of systematic, intensive case finding.

In Wisconsin the state antituberculosis association is a very active, full time health agency. Though not paid by the state they have assumed the "case finding," and largely direct the tuberculosis work done in the state, cooperating with the state department of health. They raise funds through the Christmas seal sale, possess a traveling medical and nursing personnel, and have a large office force in Milwaukee daily in touch with every detail of the work.

AGENCIES FOR CASE FINDING IN MISSOURI

For a beginning in "case finding" there are in Missouri two established agencies through which many infections and many cases of tuberculosis are already found, and can with their general use reveal many or all of the cases in most communities.

First, and at hand, is our public school system through which there is made possible contact with the whole family life. With the daily attendance at school of children from 5 years of age up to and through adolescence, there is an excellent and practical opportunity to determine in any community rural or urban by means of the tuberculin test those children who have acquired the infection of tuberculosis. The reactors of such group suggest a roentgen examination to determine the location and extent of the disease. In addition, they direct us

into the homes where frequently an open case, the source of the infection, is found.

With the added stress and responsibilities of high school life in adolescence a larger number of children are being found with active pulmonary tuberculosis. Likewise is this true in and through college and university. Several times a year do students from the state university and the teachers' colleges come to the Sanatorium at Mt. Vernon far advanced and after having exposed others to their infection. And at times such is found true with teachers in the various schools of the state in which many pupils are exposed and often infected. Such is a specific phase of the problem indicating the imperative need in Missouri of a more intensive "case finding" system.

The second instrument available in a few counties is the county health unit with its medical officer and nurse. There are some 14 active full time offices and about 57 part time offices. This gives us a nucleus which should be extended by the coordinating of counties into districts and acting under common direction. Many cases of tuberculosis have been found and properly directed by such offices. The whole state should be surveyed and carefully districted, units being formed where needed.

While not general nor legally required by the state, many communities have already opened their schools for medical inspection and tuberculin testing, and some state schools have established a system of physical examination of all students on entrance. But, as yet in Missouri there is no general and comprehensive system of "case finding" in the field of tuberculosis conducted or authorized by the state. As a result, the general and special sources of spreading the infection of tuberculosis are just as they have been thus accounting for the present high incidence of and the too great mortality from the disease.

Is it not quite possible, with careful study of the problem as it now exists and with the proper cooperation of all the medical and social agencies in the state, that the State Tuberculosis Association can assume the directing of the "case finding" throughout the 114 counties and, having the data in hand, furnish it to the state department of health? With such facts possessed the state with its authority and machinery could materially aid in the better control of tuberculosis and within a few years lead this conference area to a very much lower mortality rate than now obtains.

IV. INSTITUTIONAL OR SANATORIUM CARE

There is little question today about the value of institutional or sanatorium care for the active

parenchymal case of tuberculosis, be it minimal, moderately advanced or far advanced, although it is realized that from necessity home treatment still has to be employed. The sanatorium treatment is based upon the need of continuous and directed rest for all active cases. In addition it affords an immediate means by the isolation of the patient of preventing further spread of the infection.

NUMBER OF SANATORIUM BEDS

With the present restricted number of sanatorium beds in Missouri; with the relatively large number of advanced cases of tuberculosis and in view of the economic situation confronting us, the question arises as to how we can better meet the problems involved? What are some of the facts bearing upon the local needs for sanatoria and the number of beds? Not knowing at any time the exact number and character of cases in a state or district any estimation must of necessity be relative. Some recommend two beds for every known death of tuberculosis. Probably such is not above the practical need. For purpose of discussion and with the present number and location of Missouri's sanatoria and with the deaths known for the last few years, two beds can well be recommended for each death.

In 1931 there were reported to the department of health at Jefferson City, 2,622 deaths from tuberculosis. Missouri has public and private sanatoria at Mount Vernon, St. Louis, St. Louis County, Kansas City, Webb City, Springfield and St. Joseph, and special bed provision for the tuberculous at the state penitentiary and the state hospitals. The rural and isolated districts are not well provided. Classifying and adding the available public and private sanatorium beds for tuberculosis in the state, there are 1,940. Of these 1,647 are in public institutions, 293 in private institutions, specifically, in St. Louis.

There were, in Missouri in 1931, as stated, approximately 26,000 cases of tuberculosis. During such year there were 2,740 new cases reported and 2,622 deaths. Eliminating incorrect diagnoses and evasions this offers a basis of Missouri's needs in sanatorium beds. Twice the number of deaths would be 5,244. Subtracting therefrom 1,940, our present number of beds, there is still a shortage of 3,300 from the estimated needs. Hence, with the present number, and located as they are mainly within our two largest municipalities, St. Louis and Kansas City, and at the State Sanatorium at Mount Vernon, 5,000 beds can well be recommended as the minimum number to adequately

meet the state's needs. Such an enlargement of our sanatorium system is urged.

With our scattered and varied population over the whole state, and considering the location of the present sanatoria and the fact that some districts, as the northern and southeastern, are not supplied, would not the wise plan be to have the state redistricted according to local needs, and when increasing the beds do so by building new sanatoria in the unprovided districts?

SPECIAL FORMS OF TREATMENT

Institutional care not only offers physical rest, diet and favorable routine for all tuberculous patients but gives the opportunity for special forms of treatment, often absolutely necessary for improvement or perhaps even the saving of life. As such should be mentioned pneumothorax, phrenicectomy, thoracoplasty and other forms of local and special therapy.

Thoracoplasty and certain other kinds of special treatment in the advanced and chronic cases of tuberculosis, come under major surgery. And it is well to add that today it is one of Missouri's urgent problems. Such major surgery requires both special qualifications and training in the surgeon and a special department and equipment for its performance. It is a fact that this state is not fully prepared to expeditiously and efficiently care for those needing chest surgery. The several sanatoria outside of St. Louis and Kansas City are without surgical departments and without chest surgeons on their staffs. To relate the present chest surgeons of the state to those sanatoria requiring their services, and to encourage the training of others for work as it arises are matters needing special investigation and recommendation thereon. Such is an important phase of the tuberculosis problem and it is up to this body to give consideration to it.

V. THE NEED OF A REHABILITATION OR FOLLOW-UP SYSTEM

It is realized and accepted by all acquainted with the nature and chronicity of tuberculosis and the modern treatment of such disease, that the discharge of a patient from a hospital or sanatorium with an "apparently arrested" or "arrested case," does not assure the bearer that he is cured. Discharges from hospitals and sanatoria are made on practical and economic grounds, and quite rightly so.

With the improved or modern sanatorium treatment of tuberculosis, including collapse therapy, the institutional routine and habits acquired are part of the treatment to be continued toward establishing a permanent arrest

or cure. Hence the rehabilitation of the discharged patient is most important, indicating a follow-up system protecting and directing him to a gradual reentrance into social and industrial life.

As yet in this state no system or plan is carried out looking toward the rehabilitation of the individual who has spent one to two years in a sanatorium under the constant surveillance and direction of doctors and nurses with every safeguard and interest. Not infrequently, within two to four months after the discharge of a patient is it learned that a relapse or reactivation has occurred. In some instances it is due to voluntary indiscretion on the part of the patient or an impractical relative. Again, economic need or uncontrolled surroundings may furnish the cause. The fact is though that, after months of progressive improvement justifying an expected cure it is most impractical to permit a relapse and an enforced repetition of treatment and further expense.

Here, as in other states, a centrally directed follow-up or social service system should be established by the state eleemosynary board or some qualified social agency, cooperating with and perhaps directed by the management of the state and county sanatoria. Considering the years of limitation and protracted treatment caused by tuberculosis and the great and continuous expense entailed, the uninterrupted rehabilitation of an improved and discharged patient is the most important period of his life and a paramount duty of the state to attain.

VI. LEGISLATION

Missouri has established a State Department of Health with its regularly appointed health commissioner who directs all health work done in the state. Legally, however, he is authorized to carry on only "a generalized health program." The following statement was recently received from the commissioner's office: "The State Department of Health does no specific tuberculosis control work. The diagnosis of disease has been left to the medical profession entirely."

It is not for us at this time to decide whether the state or some delegated agency is to be held responsible for the control of tuberculosis in Missouri, but it does behoove us to see that proper and comprehensive laws governing such control either are or that they be authorized by our state legislature.

If a comprehensive and competent survey of the exact number of cases of tuberculosis in the state should be had; if all cases of open tuberculosis should be located and isolated; if the health requirements of the state indicate at

present two more district sanatoria; if a special group of physicians should be named to give lectures on tuberculosis to the profession of the state, then legislation should be effected and such work and projects should be financed and supported by the state. Efforts toward legislation to meet the needs of the tuberculosis problem as it exists in Missouri should be taken up in the proper way. Probably a legislative committee should be named by this body, empowered to confer with the proper officials of the state, looking forward to greater progress in tuberculosis work and better control of the disease.

IN CONCLUSION

The speaker has attempted in this paper to portray some of the facts bearing upon the problem of tuberculosis in Missouri and in addition to suggest certain methods and means to more adequately meet it. It is hoped that the subject may be freely discussed and as a result some definite and early action be taken which will in the future practically control the disease as a state health problem.

Believing most firmly in the comity of nations for the solution of international ills, the speaker also believes in the close cooperation and coordination of all the state factors and agencies having to do with public health in this fight against tuberculosis. Hence at the proper time there will be presented for your consideration a resolution bearing upon this subject.

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DISCUSSION

DR. H. I. SPECTOR, St. Louis: Dr. Child's painstaking analysis of the tuberculosis problem in the state of Missouri uncurtains much interesting information. His findings partially explain the reasons for the high mortality rate from this disease in our state.

In his attempt to diagnose the tuberculosis problem in Missouri, Dr. Child parades before us our existing faulty system for the control of tuberculosis by reminding us that our machinery for the control of this disease is not well organized, that our statistical data are incomplete, that our legislation is very meager, that out of 114 counties only a few have full time health officers, that there is a great shortage of beds for tuberculous individuals, all defects that are undoubtedly responsible for our unenviable record.

In the treatment of the tuberculosis problem he prescribes education, case findings, institutional care, clinic and nursing service, rehabilitation and follow-up, legislation.

I wish to state at the outset that I am in full accord with Dr. Child's suggestive method of attack on the problem and I shall attempt in the remarks to follow to point out the importance of these procedures in the control of tuberculosis.

Those who have battled with the problems of control have long realized that no one individual can control tuberculosis, no one agency can control tuberculosis. A comprehensive investigation of the problem leads one to the conclusion that controlling tuberculosis is just as much the responsibility of the public at large as it is of the official agencies; just as much the responsibility of the tuberculous patient as it is of the contact, and just as much the responsibility of the school board and the school teacher as it is of the doctor, nurse and social worker.

A chronological review of the problem since the days of Trudeau and Biggs reveals that no tuberculosis program can succeed without an educational and a legislative foundation. Education usually precedes legislation. History of the public health movement in this country shows that it is necessary first to educate those who are to legislate for the welfare of a community. It is for this reason that a well organized nonofficial agency like our Missouri State Tuberculosis Association can function most effectively in this direction by educating the public and the legislators as to the most effective program of control.

What legislative measures are necessary for the control of tuberculosis in our state? Dr. Child informs us that the State Department of Health does no specific tuberculosis control work. He also tells us that legislation in this direction is very meager. Obviously, the initial step leading to the proper control of the disease in the state is passage of legislation for the creation of a division of tuberculosis with all its ramifications under the supervision of the State Department of Health. Effective legislation for the proper supervision of the active cases of tuberculosis is imperative. Such legislation should provide laws for the reporting of cases by physicians, for the establishment of diagnostic clinics and for the erection of sanatoria and preventoria with an adequate bed capacity for the hospitalization of the tuberculous and ill nourished contacts, respectively.

In these days of financial retrenchment I hesitate to remind you that the employment of a director of tuberculosis with a staff of physicians and public health nurses naturally appears to be a costly procedure. Yet, as costly as the undertaking would be, it is indispensable for the proper direction and operation of the control machinery and in the long run would prove most economical and beneficial to the community. With the machinery for a state control program available, the next problem is to find the open case.

It is believed by many that the proper management of the open case of tuberculosis is the keynote of success in an antituberculosis campaign; others are inclined to attack the problem from the viewpoint of the contact. It will be agreed by all that a program that takes both of these factors into consideration will prove most ideal. No program of control can be successful unless the significant relationship between the open case and the contact is appreciated, or until such intimate relationship is broken. To break contact requires either the removal of the patient from the home, usually into a sanatorium, or the removal of the children from the home, usually into a preventorium. Naturally, an adequate number of sanatorium beds for the tuberculous and a sufficient number of preventoria for the contacts are the first principles in an effective control program.

Finding the active case early is of the greatest importance from the viewpoint of prevention. This is not an easy task especially if we consider the fact

that active pulmonary tuberculosis may at times exist in an individual without impressive symptoms or signs.

That the private physician is a potent factor in the control of the disease must be conceded. Health departments must work hand in hand with the private physician because the first knowledge of the presence of disease usually comes from the physicians, and the latter therefore logically becomes the keyman in the control and prevention of tuberculosis.

It will be wise for public health officials to take the medical profession into their confidence and to abandon the traditional police power attitude in dealing with the medical profession and to remember that much more can be accomplished by good willed co-operation based upon understanding. Health officials should realize that many general practitioners have diagnostic limitations as far as the recognition of tuberculosis in its incipency is concerned and should therefore extend a helpful hand to them. A program for the education of the physician in the diagnosis of early pulmonary tuberculosis should constitute a prominent part of any control program.

Recently such a clinical course was offered to white and Negro physicians in St. Louis under the direction of the tuberculosis controller. Because of the practical phase of this course it was intended to limit registration to 50 physicians; however, the demand for this course was so great that 97 physicians had to be accommodated. Many physicians are now clamoring for another such group of clinical demonstrations. The value of this method from the viewpoint of control is already noticeable in our diagnostic clinics, since consultations of general practitioners with our clinic staff has in the last few months markedly increased.

To bring the tuberculosis contact and the patient with few symptoms but with beginning disease to the private physician's office or to the municipal clinic is a constant problem in the control of tuberculosis. The public health nurse is a great help in this direction as far as the contacts of known cases are concerned. That education of the public in the importance of periodic health examinations will be a forward step in this direction should no longer be questioned. It is only in this way that the real early cases will be discovered.

After finding and isolating the open cases, the source from which the disease was contracted must be looked for and the victim to whom the disease was transmitted must be located. Here again education of the contacts and relatives of the tuberculous will contribute to the success of this phase of the program.

In conclusion, I wish to state that a plan of tuberculosis control which may be adequate and successful in one community may prove inadequate and unsuccessful if applied to another community. Any program of tuberculosis control must be tailor-made and the details of the individual plan must be fitted to the needs of the individual community.

Given a certain community, assuming the presence of an open case of tuberculosis in the community, the solution to the problem lies; first, in creating the proper educational and legislative machinery; second, in finding the open case; third, in finding a bed and isolating the open case; fourth, in finding the source of original infection; fifth, in finding those to whom the disease has been transmitted; sixth, in protecting those who have been infected from developing active disease, and seventh, in protecting those who have not yet been infected from becoming infected.

As a final emphasis, I wish to stress the thought that education, whether through the medium of health officer, private physician, nurse, social worker, teacher, newspaper, radio or lecture, is the master key to the control of tuberculosis in any community.

TREATMENT OF PAIN IN CHRONIC ARTHRITIS

DANIEL E. KAUFFMAN, M.D.

ST. LOUIS

There is no chronic disease which causes more hopelessness in the patient and at the same time longevity of the disease than arthritis. There are two types of patients that present themselves for treatment; namely, the early arthritic with no deformity and the late one with deformity. The former has considerable pain but his main worry is in becoming crippled. The latter type is only interested in relief from pain. The patient with the early arthritis needs encouragement at first more than he needs any kind of treatment.

It is the object of this paper to outline the fundamentals that I have found extremely successful in the alleviation of pain in chronic arthritis. These principles have been used by me in handling over three hundred and seventy-five private patients in the last three years. No reference is to be made of the types of arthritis as the symptom, pain, is treated alike in all cases. Other therapeutic measures, such as removing the focus of infection, treatment directed to the large bowel, correcting deformities and metabolic disturbances and the use of vaccines are omitted.

For the relief of pain four measures are used: (1) Bed rest; (2) diet; (3) contrast baths; (4) medicine.

Bed Rest.—This is very important as one cannot expect to alleviate pain in a joint that is in constant motion. This is especially important if the involvements are in a weight bearing joint, such as knee, ankle, or hip. It should be done in all cases as rest is the best weapon of attack. The patient should be kept quiet as long as the pain is present. Bed rest for arthritis should be as emphatic and as strictly carried out as it would be for an acutely sick person. Patients should not be allowed to go to the toilet. Quietness is very important. In atrophic cases passive motion should be done gently several times a day.

Diet.—There are two main diets which are used in arthritis; namely, the low carbohydrate diet advocated by Pemberton, and the reduction diet, in cases of traumatic arthritis due to obesity. The value of Pemberton's work on diet is easily appreciated by any one who treats many cases of arthritis. In many cases it, in itself, is capable of remarkable results. The following is an example of the effects of a strict diet in a case in which pain was a cardinal symptom. It should be remembered, however, that this diet is not a routine measure.

The patient, Miss O, aged 34, had an atrophic arthritis involving the phalangeal joints of the fingers of both hands, wrists and knees. The pain was excruciating and there was marked swelling and tenderness in these joints. No ankylosis but there was considerable atrophy of the interosseous muscles of both hands. She gave a history of the present attack lasting over seven months. There were three previous attacks of diffused arthritis, the first one being at the age of twenty years. She had repeated attacks of severe tonsillitis and six months prior to her first visit she had her tonsils removed. There was no alleviation of symptoms following this and no other focus of infection could be found. She was sent to the hospital where she had the usual routine treatment, consisting of bed rest, low carbohydrate diet, salicylates and contrast baths.

There was only a moderate improvement, the swelling was reduced somewhat but the pain was still severe. At the end of the second week she was put on a starvation diet, which consisted of broth, bran muffins, tea, coffee, no cream or sugar. On the third day there was great improvement; the pain had practically disappeared and she felt better than she had for seven months. On the third day lettuce and spinach were added to the diet. After this time there was a gradual increase in the amount of food allowed. On the seventh day she was taking a thousand calorie diet. At this time there was no pain and suppleness had returned to the joints. It has been several months since the patient left the hospital; she is now on a general diet and the pain and swelling have not recurred. It is impossible to say at this time if she is completely cured but the fact remains that the starvation diet was the one big factor in her recovery.

It is my routine to put a patient on a restricted diet varying from one thousand to fifteen hundred calories, at the beginning of the treatment. This restriction should last only as long as the pain is present. Practically all the patients with the atrophic type are undernourished and as soon as possible should be placed on a building up diet.

The cases of hypertrophic arthritis due to obesity require the same reduction diet that would be used in any case of overweight.

Too great emphasis cannot be laid on the importance of losing weight in patients where obesity is a factor. In cases where the knee, ankles, or hips are involved the reduction of weight lessens the insult to the joint. The burden is that much less to carry.

Contrast Baths.—This is the most important form of hydrotherapy for the alleviation of pain

in chronic arthritis. Its results surpass those of any kind of physiotherapy. Because of its simplicity it is often hard to impress on the patient the necessity of doing it regularly.

The only apparatus needed is a pan of hot water, a pan of ice water and two bath towels. The hot towel is wrapped around the painful joint and allowed to remain for about thirty seconds. Then the ice towel is applied in the same manner. This is repeated for twenty minutes and should be done two or three times a day. If the involvement is in the hands, they are simply immersed in the pans alternately. If the feet are the site of pain, deep pans or buckets should be used to insure covering above the ankle joint.

Medicine.—The drugs used for the relief of pain in chronic arthritis are, (a) sodium salicylate, (b) acetylsalicylic acid and (c) codeine.

Sodium salicylate is the drug most widely used in the treatment of rheumatism. Failure in achieving results with it is in my opinion, due to the dosage being too small or that it is not used over a long enough period. I am not able to see the rationale in administering salicylates intravenously. The maximum dose by this route is from thirty to fifty grains and it is possible to continue this only for a limited time. Moreover, in patients with atrophic arthritis the elbow joint is frequently involved, making access to the veins in this region difficult.

The oral method of administering sodium salicylate offers the objections that the dosage must be small, and that there is a likelihood of gastric upset when given even in small doses if continued for a long time. Nausea and other signs of gastric irritation usually are present when the salicylates are taken in small doses before there are any head noises.

The method I prefer is to give the drug by rectum. The two great advantages of this method are: (1) Large doses can be given without the danger of gastric upset, and (2) it can be continued indefinitely.

The disadvantages are that the amount actually absorbed is not known, and if taken at home it is inconvenient. This latter objection is readily overcome after the patient has become accustomed to the procedure. It is not unusual for patients to remain on rectal salicylates for over a year, taking from two to five treatments a week.

In the hospital it is routine on the first day to give from one hundred to one hundred and fifty grains of sodium salicylates rectally by Murphy drip in four ounces of water, one hour after an enema, morning and night. On the second day, from one hundred and fifty to two hundred grains are given in the same manner.

From this point the dose is either increased or decreased depending on the condition of the patient. It is very seldom necessary to give over three hundred or four hundred grains a day. Usually after the second day, one maintenance treatment is given, generally from one hundred and fifty to two hundred and fifty grains being sufficient.

Due to economic conditions it is necessary for many patients to take the salicylates rectally in their home. Of the 381 patients treated since November, 1929, 134 have been treated exclusively at home.

The dosage is obviously the same at home as in the hospital. The method of administering is variable. The Murphy drip is not applied in the private home because of lack of time and attendance. Injection of the salicylates in a paste has also been tried. The simplest of all arrangements is to insert a colon tube, one hour after a cleansing enema, and connect the rectal tip of the enema bag containing the salicylates in solution to this tube. When the bag and tubing are empty slowly withdraw the colon tube and instruct the patient to lie quietly for at least thirty minutes.

Each patient will work out his own technic. He should be asked frequently about ringing in the ears and head noises. If these are never noticed he is not getting enough salicylates, or the manner of administering is faulty. Many get excellent results by merely taking the solution as an enema.

The sodium salicylate should be given weeks and often months after all the pain has gone. For this reason a maintenance dose should be calculated. This is the amount immediately below the number of grains necessary to cause slight head noises. In some cases it will be as low as one hundred and fifty grains every other day. No fear need be had of causing irritation to the bowel by the continued administration of salicylates rectally. I have never seen any ill effects.

Acetylsalicylic acid and codeine are very old but nevertheless important analgesics in chronic arthritis. They are used singly or in combination. It is my opinion that there is a strong synergism between acetylsalicylic acid and sodium salicylate. The analgesic effect is increased markedly when the two are used together.

Many other drugs have been used for the alleviation of pain in chronic rheumatism. They spring into prominence only later to fall into disuse. They are put on the market and advertised extensively to the profession. Phosphorus, calcium, sulphur and a combination of cinchophen and iodine, all have had their periods

of popularity. The trend appears to be in a cycle. In 1924 the late Professor Kutner, of Berlin, tried sulphur extensively but discontinued its use in 1926. In the last year it has again become popular, but I have been unable to obtain satisfactory results from its use.

It should be remembered that about 5 per cent of the people who think they have arthritis do not have it. Either they made their own diagnosis or some one has made an incorrect diagnosis for them. They get rid of their aches in time in spite of what was done for them, be it massaging the soles, adjusting the spine, drinking mineral water, or taking indiscriminately proprietary medicines.

Before concluding, I wish to emphasize the fact that more can be done for chronic arthritis than for any other chronic disease. The physician should always keep this in mind, and when he sees a sufferer of this disease to give him words of encouragement. This will be a great contrast to the case where the physician tells the patient, "You have arthritis, nothing can be done for you and you might as well save your money." This only adds agony to the already pitiful condition. It increases the difficulty of handling the patient throughout the rest of his disease.

The treatment of pain in chronic arthritis is purely symptomatic.

Missouri Theater Building.

SPINAL FLUID CELL COUNT AND ENCAPSULATION OF BRAIN ABSCESS

Henry W. Woltman, Rochester, Minn. (*Journal A. M. A.*, March 11, 1933), states that abscess of the brain presents a highly varied clinical panorama that cannot be reduced to a simple formula. Each case is a law unto itself. The problem calls not only for a diagnosis but also for a decision as to when the abscess shall be drained. Awaiting the optimal time means a better capsule and a liquefied interior, and consequently better drainage; it means less virulent organisms and greater immunity, and hence less danger to the patient. The risk of performing spinal puncture in cases of abscess has probably been overrated, and thus physicians have been deprived of information that might be helpful. After invasion of the brain has taken place and the formation of an abscess gets under way, the number of neutrophils in the spinal fluid becomes absolutely and relatively reduced. The persistence or reappearance of neutrophils suggests that encapsulation is not progressing favorably. An appreciable number of neutrophils may indicate extension of the abscess or close proximity of the abscess to the ventricle. A predominance of neutrophils in the spinal fluid was seen in cases in which operation was performed unnecessarily or which ended fatally. A small number of lymphocytes would seem, on the whole, to indicate better encapsulation, greater resistance, and a smoother convalescence after operation.

PRELIMINARY OBSERVATIONS ON THE MENSTRUAL CYCLE AND PREGNANCY WITH A SIMPLE PREGNANCY DIAGNOSTIC TEST

DONALD M. DOWELL, M.D.

CHILLICOTHE, MO.

For many years there have been numerous observations, advances and theories regarding the facts of the menstrual cycle and pregnancy and their causes and still it seems that we are in ignorance of the phenomenon in its entirety.

In recent years the role of the pituitary gland is coming more and more to the light. It has always seemed that the ovary was the all important gland concerned in the production of menstruation and of pregnancy, but some phases have always remained a mystery as to what activated the ovaries.

First, let us review the anatomy and the physiology of the ovary. There is a cortex and a medulla in this organ. Until puberty, the surface of the ovary remains smooth. Microscopically there are contained in the cortex a very embryonic sort of connective tissue with many closely packed primordial follicles. The older the individual, it seems, the fewer are the primordial follicles. There is a single layer of cells about the follicle which begin to proliferate and to produce a multiple layer called the stratum granulosum. As the follicle gradually enlarges a cavity is formed and the ovum is pushed to one side in a heaped up mass of epithelial cells which is the discus proligerus. The resulting fluid is the follicular fluid. As the cavity grows larger the granule cells get thinner and the ovum approaches the periphery. The mature follicle now is the graafian follicle and consists of the following: a connective tissue covering, the theca folliculi, the membrana granulosa, the follicular fluid and ovum. The theca folliculi consists of two layers, the internal and external, which are the tunica interna and externa.

When the follicle ruptures the corpus luteum is developed. The ovum, the liquor folliculi and a part of the granule cells escape and the walls of the follicle collapse. This cavity in a short time is filled with blood from the vessels of the tunica interna as a result of the rupture of the follicle. There is a narrow ring of small yellow cells about the old ruptured follicle which gradually invade the center of the follicle. Hence the name "corpus luteum."

There has been considerable happening in the development of the corpus luteum that for many years we were in ignorance of. There was a hormone elaborated by the graafian follicle which has been called theelin. In the

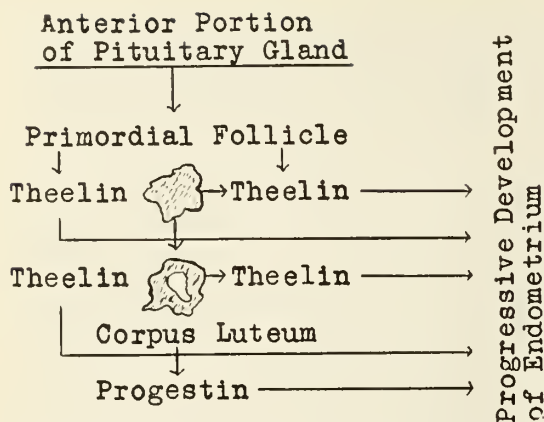


Fig. 1. Schematic representation of action of anterior pituitary and ovarian follicular hormones on the uterine endometrium.

meantime there has also been taking place some changes in the character of the endometrium of the uterus.

The endometrium of the uterus is constantly undergoing changes. It has been definitely proved that the complete endometrium is shed during menstruation but that the new endometrium is being formed even before menstruation has ceased. As it matures the glands seem to hypertrophy and the corpus seems to become a perfect bed for the expected fertilized ovum. As the ovum migrates towards the corpus uteri there is being produced another hormone in addition to theelin which also comes from the ovarian follicle, progesterin, which is elaborated by the corpus luteum.¹

Halban, Meyer, Ruge and R. Schroeder concluded some time ago that ovulation occurs in the later days of the second week following the beginning of the last period, and is immediately followed by the rapid development of the corpus luteum which seems to reach its highest degree of growth ten or twelve days later.²

To recapitulate, we have the formation of the ovarian follicular hormone theelin produced from the time the ovum starts maturing until it is extruded by the rupture of the follicle. Theelin is carried by the blood stream to the uterus where it stimulates the endometrium to hypertrophy and form a bed for the expected

ovum. In addition to the corpus luteum hormone progesterin, theelin is also elaborated which continues its action of a stimulating nature on the endometrium. Progesterin, I feel, is the supporting hormone of the endometrium even though it exerts an additional stimulating effect, and theelin the stimulatory hormone. The uterine endometrium reaches its highest degree of perfection on or about the fourteenth day and remains in a similar state until the twenty-eighth day. From the time of progesterin's appearance until the twenty-eighth day of the cycle it supports the endometrium. However if the ovum is not fertilized by this time and is dead or has been expelled from the uterus, the supporting action of progesterin fails and without this supporting influence the endometrium breaks down and is shed in the characteristic menstruation.

Now, what is it that activates the primordial follicle to growth, for we believe we have a good concrete theory of the rest of the process. Just what is the stimulating influence in this case? It has been definitely proved upon experimental animals that there is an influence over ovulation and menstruation exerted by the pituitary gland. We believe there is a growth stimulating hormone and proved without a doubt that it is secreted by the anterior portion of the pituitary gland.³ Zondek feels that there are two hormones secreted by the anterior part of the gland, a follicle ripening hormone and a luteinizing hormone. American workers, however, have pointed out that a pituitary hormone can be obtained from the urine of pregnant women which when injected into animals has the power of producing follicle ripening and also luteinization. So it seems a certainty that the anterior pituitary gland exerts its effect through either one or two different hormones to cause the primordial follicle to ripen and the process of luteinization.

It has become an accepted fact that the urine of a pregnant woman when injected into the veins of the ears of virginal female rabbits, will produce follicle ripening and luteinization as found upon killing the rabbits several hours later. We must assume that the pregnant woman is passing this hormone in the urine.

This has more or less suggested to me along with certain conversation that I have had with others interested in this phenomenon, that possibly the intradermal injection of an extract of anterior pituitary gland into the flexor surface of the arm of a pregnant woman might give a reaction that would in some way lead to the conclusion that she was pregnant.⁴ This proved quite incorrect however. I then tried injecting a few minims intradermally into the flexor sur-

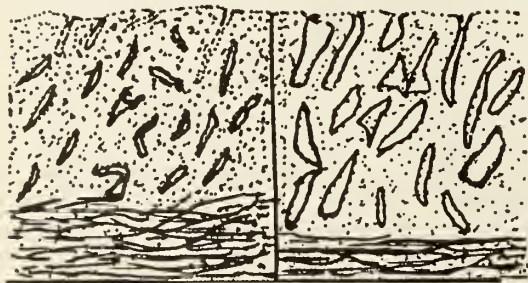


Fig. 2. Early and late premenstrual endometrium.

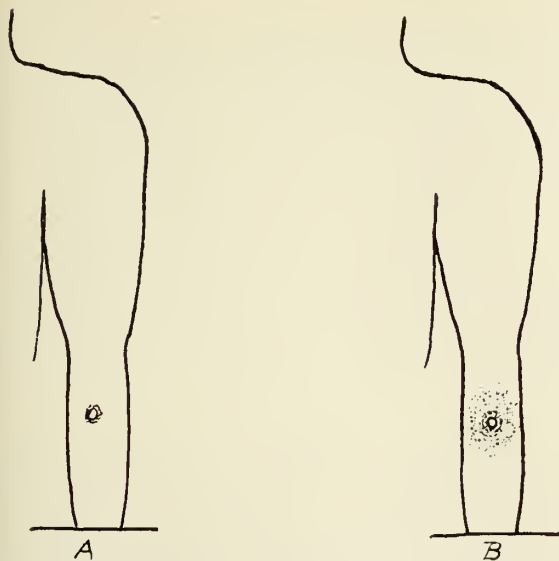


Fig. 3. A. Positive test. Intradermal wheal with negative reaction signifying pregnancy. B. Negative test. Typical erythematous intradermal wheal with reaction signifying absence of pregnancy.

face of the arms of a supposedly nonpregnant women and obtained a very marked degree of erythema about the wheal at the injected site.

We have for many years been acquainted with the phenomenon of allergy whose many phases are far-reaching. I have been thinking that perhaps this is in some respects a new phase of allergy. Possibly a given patient who is elaborating the hormone or hormones of the anterior pituitary gland in such a manner that the body is absorbing them and throwing them off in the urine, must have developed a tolerance for this particular substance. The patient who is not doing this would of course be less familiar with the substance, so to speak, and therefore show a reaction when this substance was injected intradermally. This can be likened, I believe, to the use of any foreign protein substance. As an example, let us take diphtheria antitoxin, antitetanic serum, peptone, or aolan, all of which most certainly will produce an area of erythema as a result of an intradermal injection when the patient has only recently been subjected to some other hypodermic medication that has contained a common foreign protein.

SUMMARY

1. This is merely an attempt to correlate our present supposed knowledge of ovulation, menstruation and pregnancy.

2. Whether this supposed test is due to an allergic reaction or not is merely a conjecture.

3. This test has been accurate in the author's hands and in others. It is simple, safe and quite inexpensive.

706 Locust Street.

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VEGETAL (PEANUT) BRONCHITIS

RICHARD L. BOWER, M.D.

KANSAS CITY, MO.

Vegetal bronchitis is caused by the inspiration into the lower air passages of various substances of vegetal origin. The most common of these etiologic factors are peanut kernels, other nut kernels, beans, watermelon seeds, corn and fruit seeds. The condition is peculiar to childhood and the severity of the resulting symptoms is more pronounced in very young children.

The most important initial symptoms are choking, gagging, coughing and wheezing. These may be followed by a symptomless interval of several days, due to the lodgment of a nonobstructive foreign body in a bronchus. Foreign bodies that remain free and movable in the trachea cause more violent symptoms and frequently are more dangerous than those that become fixed in a bronchus. Due to the constant irritation of the loose subglottic tissue by the foreign body, edema in this region is very apt to occur with sudden asphyxiation. With a movable intratracheal foreign body, the three cardinal signs of Jackson appear, namely; an "audible slap," a "palpatory thud" and an "asthmatic wheeze." If the vegetal foreign body remains in a bronchus the signs and symptoms depend upon whether the bronchus is occluded or not. If the foreign body by reason of its size occludes the bronchus only on expiration, signs of obstructive emphysema develop distal to the foreign body; whereas, if the bronchus is completely plugged by the foreign body signs of atelectasis are present distal to the point of lodgment of the foreign body.

The most important and valuable diagnostic aid is rendered by the roentgen ray. If an obstructive emphysema due to an incomplete blocking of a bronchus is present, the roentgen ray taken at the end of expiration will show the diaphragm flattened, depressed and with less excursion on the invaded side. The heart and mediastinum will move over toward the uninvolved side and the invaded lung will be less dense than the opposite side. This is due to the air being trapped on expiration by the closure

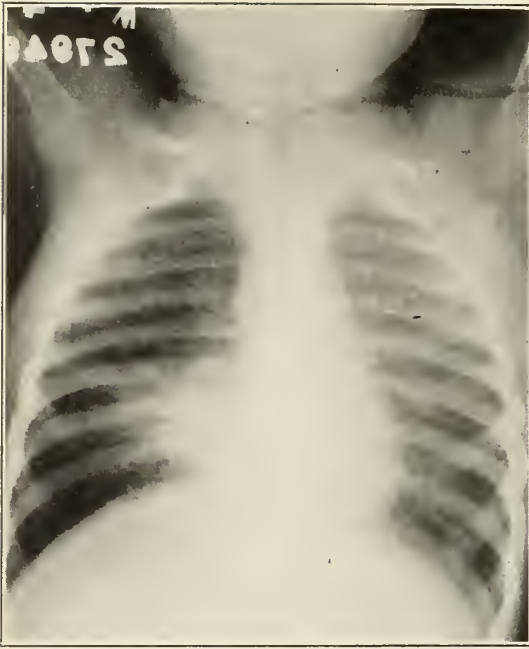


Fig. 1. Shows area of opacity extending out from right hilus characteristic of inflammatory and exudative changes following aspiration of a foreign body. No displacement of cardiac shadow or mediastinal structures.

of the bronchial wall around the foreign body. On inspiration the bronchus enlarges and affords ingress to more air which in turn is trapped on expiration, thus leading to an emphysema distal to the partial bronchial blockage.

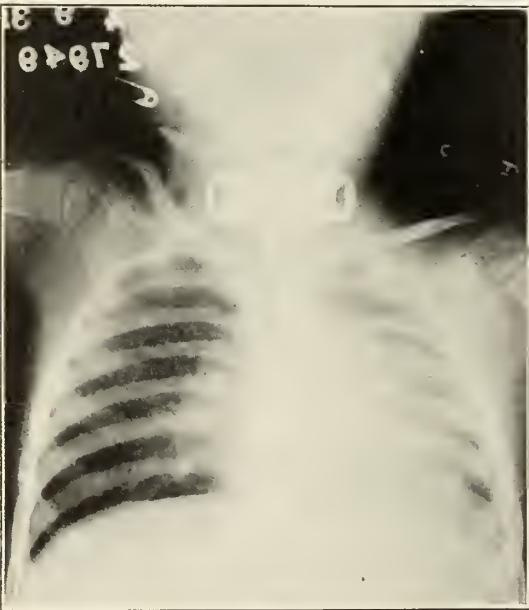


Fig. 2. Shows cardiac shadow displacement of mediastinal structures and trachea, some increased density over left lung field and lack of expansion as compared to right side. Still some mottling over right base but typical characteristics of abscess have disappeared. Marked improvement in right lung but atelectatic change in left may be responsible for some present symptoms.

If, on the other hand, the bronchus is completely plugged, the roentgen ray will show an atelectatic condition present. Here the mediastinal structures move toward the affected side and stay there. There is no sidewise movement with respiration as is seen in obstructive emphysema.

The treatment for vegetal bronchitis is bronchoscopic removal of the offending foreign body as soon as possible. No anesthesia should be used except a 10 per cent cocaine and adrenalin swab. The following case presents most of the salient features that may be found in vegetal bronchitis:

REPORT OF CASE

Dorothy McH., aged 2, was admitted to Research Hospital, April 4, 1932. Past history essentially negative. Four days before admittance her grandmother had given her some peanuts and while eating them the child had a severe coughing spell with acute respiratory embarrassment. She coughed, gagged and vomited but could not seem to get relief. After some little time she quieted down and slept but breathed with a heavy wheeze. The next night her temperature rose and the next day, her condition not improving, she was taken to Springfield where roentgen rays of her chest were taken and the diagnosis of a bronchial foreign body was made. Bronchoscopy was advised and she was brought to Kansas City to have this done.

When admitted her temperature was 101.4, rectally, pulse 140, respiration 48. She coughed occasionally and wheezed with every respiratory effort. Physical examination was negative except for the chest. This was symmetrical with good expansion and normal fremitus. Resonance was slightly impaired on

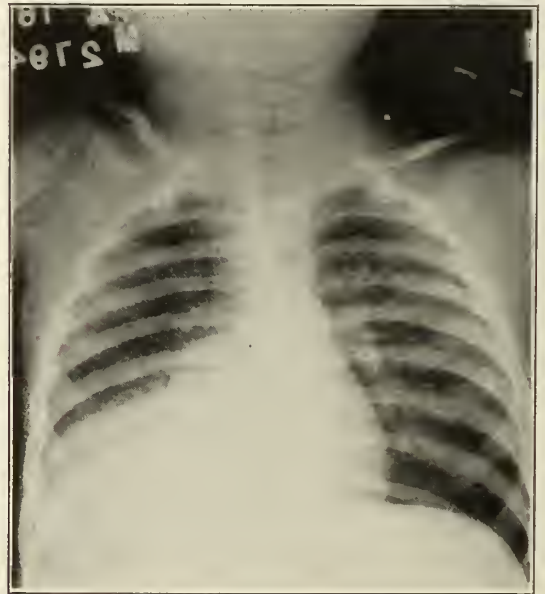


Fig. 3. Shows heart back in its normal position with diaphragm in normal position. Considerable respiratory movement. Left lung field clear. Right diaphragm high and increased density at right hilus. Heart apparently displaced further to right. Height of right diaphragm, increased density in lower right lung field and increased density at the hilus might indicate a possible bronchial occlusion that could be due to a mucous plug with retention of secretion back of the plug.

the right. No rales were heard. Roentgenogram taken on admittance is shown in figure 1.

The diagnosis of foreign body, probably peanut, being confirmed, an immediate bronchoscopy was done under local anesthesia. A large amount of tenacious purulent secretion was found in the right main bronchus. When this was removed several small particles of peanut were removed. Following the bronchoscopy it was thought best to do a tracheotomy to facilitate drainage; this was done under local anesthesia. Orders were left to aspirate through the tracheotomy tube every hour. This was accomplished by means of a small catheter attached to a suction pump. The improvement of the child was not as marked as one would expect and a second bronchoscopy was done four days after the first. Much thick purulent secretion was removed together with several small peanut fragments, but no sizable piece of peanut was seen (fig. 2). The child seemed to improve following this and the tracheotomy tube was removed. Two weeks after the first bronchoscopy a roentgenogram (fig. 3) showed the left lung fairly clear with a partial atelectasis of the right lung thought to be due to a mucous plug. The parents wished to take the child to her uncle's home and he being a physician consent was given. Figure 3 shows a roentgenogram taken just before her discharge from the hospital.

The child seemed to improve for three weeks but was again brought to the hospital May 20, 1932, because of increased cough and temperature. Physical examination showed impaired resonance over the middle and lower portions of the right lung. Suspecting a lung abscess had developed, a bronchoscopy was done on the following morning and a piece of peanut kernel was readily seen, grasped and removed from the right main bronchus, followed by the aspiration of a large amount of purulent foul-smelling secretion. A tracheotomy was again done. Some difficulty was encountered because of the scar tissue resulting from the previous tracheotomy. Frequent aspirations through the tracheotomy tube were done for the next week. Figure 4 shows a roentgenogram taken 3 days after the last bronchoscopy.

Two lipiodol instillations of 5 c.c. each and four whole blood transfusions of 10 c.c. each were given

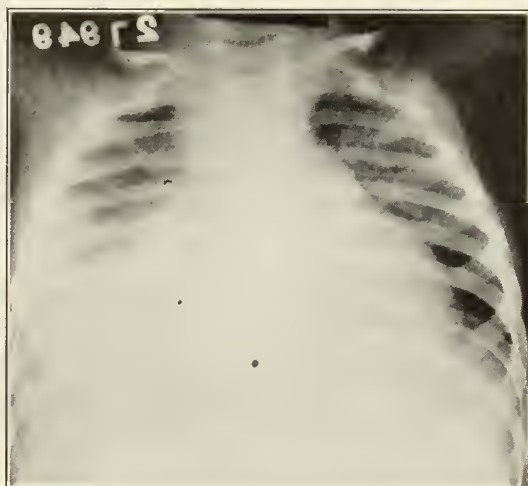


Fig. 5. Shows considerable opacity still in the lower right lung field, loss of shadow of diaphragm, increased density of right hilar structures and little change in the lower portion of right lung.

in the next week. After two weeks in the hospital the child was allowed to be taken home and the subsequent progress was uneventful. Figure 5 is a roentgenogram taken 3 weeks after the last bronchoscopy. At the date of the last roentgenogram July 26, 1932, the child appeared to be fully recovered, the roentgenogram showing no lesions (fig. 6).

This case illustrates the necessity of attentive after-care when fragments of peanuts have been aspirated into the lungs. Certainly, had not a tracheotomy been done following the first bronchoscopy the child would have succumbed to the intense laryngotracheobronchitis with toxemia that peanuts are capable of causing. One is indeed impressed by the relatively small size of peanut kernel necessary to produce such violent or fatal reaction. Heatly and Clausen produced typical vegetal bronchitis in rabbits by in-

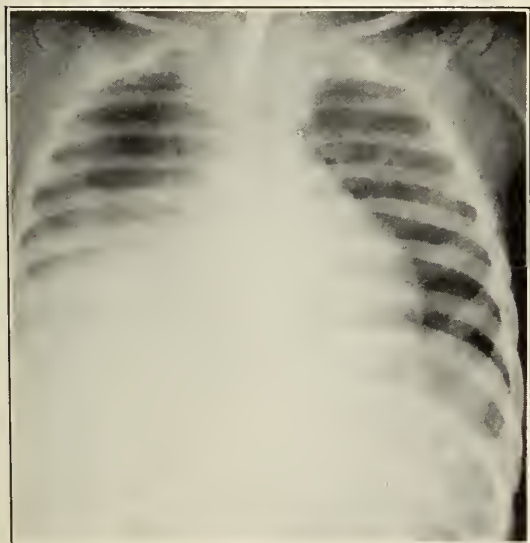


Fig. 4. Shows much opacity involving lower half of right lung field and obliteration of diaphragm. Probably a pneumonic process with some fluid still remaining. No definite displacement of cardiac shadow.

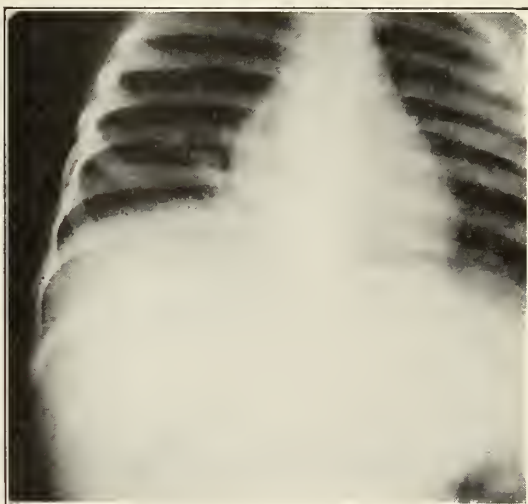


Fig. 6. No lesions in lungs except increased height of right diaphragm. Above roentgenogram interpretations by Dr. Ira H. Lockwood.

jecting sterile peanut oil in the trachea. They found that the intense reaction was due to an acid present in both the oleic and linolic fractions and absent in the solid fraction of the fatty acid of peanut oil. Infection plays only a secondary role in the production of vegetal bronchitis.

The bronchial secretion in these cases is especially abundant and so tenacious and thick that the child cannot remove it by coughing; but its removal is necessary either by bronchoscopic aspiration or through a tracheal cannula if a tracheotomy has been done. It is my impression that in a case of peanut bronchitis, if one is not absolutely sure all the peanut kernel has been removed a tracheotomy is indicated. It is not unusual in peanut cases to have a small kernel remain in the lungs after the first bronchoscopy, and a tracheotomy will markedly facilitate any future maneuvers necessary, such as bronchial aspiration or subsequent bronchoscopies.

609 Professional Building.

THE PRESENT DAY STATUS OF HEART DISEASE

O. P. J. FALK, M.D.

ST. LOUIS

The increasing significance of heart disease in the causation of disability or death is quite apparent. Conservative estimates indicate that two persons in every hundred suffer from serious heart disease and that there are in the United States over two million persons with damaged hearts.

Ten per cent of the total bed capacity of our general hospitals is used for the care of patients with heart disease, according to the report of the American Heart Association, which goes on to state that of all serious and ultimately fatal diseases those of the heart are of longest duration and, with the exception of mental disorders, are the most persistent handicap to self-support.

Heart disease is now the greatest single cause of deaths in the United States, outnumbering both tuberculosis and cancer. Mortality statistics show an increase in cardiac deaths in the period from 1900 to 1930 of approximately 100 per cent, an increase from 1374 in 1900 to 2664 in 1930.

To a certain degree the increased death rate from heart disease is a tribute to our increasing control over certain infectious diseases of early life, thus enabling more people to live to the age of degenerative disease some types of which

cause most of the cardiac deaths, including such factors as hypertension and coronary disease. Unquestionably the stress and strain of our ever increasing competitive existence in this industrial age, with all its component strenuousness, is likewise an etiologic factor.

Many men lead active lives until they reach the fifties and then something happens, something which our experience backed by statistics shows is often a breakdown of the heart or circulation. The heart disease of middle life usually does not affect the valves but is as Christian terms it "chronic nonvalvular heart disease."

Though we recognize the clinical manifestations of this group of cases we are somewhat in the dark as to the cause. Sometimes there is a low blood pressure or a normal one and the changes in the heart are apt to be primarily due to an endarteritis of the coronary vessels with associated anginal or occlusion symptoms. More often the cardiac breakdown is associated with hypertension which is the cause of the heart disease, but as we are in the dark concerning the ultimate cause of this pressure increase we are only pushing the problem one step back.

These are thoughts that not only bid us to meditate upon the gravity and frequency of heart disease, but also to realize that the problem of hypertensive vascular disease (the greatest single cause of heart disease) is a greater challenge to our profession than even the problem of cancer.

RECENT ADVANCES IN THE STUDY OF CARDIOVASCULAR DISEASE

Among the more significant advances in the study of cardiovascular disease in recent years are the following (1) Development of the etiological concept of heart disease; (2) gradual development of a comprehensive clinical viewpoint on hypertensive cardiovascular disease; (3) development of our knowledge of coronary disease; (4) development of definite criteria which designate the pathologic heart, and (5) recent developments in the treatment of heart disease.

The time limitations of this paper in attempting to cover such a wide field necessarily limit one to a rather sketchy review of the salient points involved. Inasmuch as clinical phenomena are interpreted in terms of the pathological, physiological and biochemical knowledge of the time, newer interpretations constantly evolve as the older become obsolete.

THE SCOPE OF CARDIOVASCULAR DISEASES

Full consideration of the problem of cardiovascular diseases must include not only the mor-

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bid states of the heart and great vessels but the entire vascular tree as well.

Certain morbid vascular conditions form the background upon which are developed pathologic cardiac states, such as the hypertrophied heart evolving upon the long continued strain of chronic vascular hypertension. Again, other vascular diseases cause myocardial damage due to nutritional changes in the heart muscle such as we find in the infarction areas often seen associated with coronary sclerosis.

In syphilis we may have aortic, coronary or myocardial pathology pursuant to spirochaetal invasion of these structures because of the widespread vascular distribution of this disease. Certain other vascular states seem confined to the peripheral vascular tree itself not necessarily entailing any cardiac disease in a direct manner either antecedent or contemporary. I refer to such conditions as the various vasomotor neuroses and degenerative states, such as Raynaud's complex, endarteritis obliterans, thrombo-angiitis obliterans, etc.

Since the principal scope of this paper deals with pathologic cardiac states in themselves and cardiac manifestations of certain vascular diseases, our next consideration must be given to the principal etiologic factors involved in the production of heart disease.

Development of the etiologic concept of heart disease is probably one of the most significant trends of present day cardiology. In a previous paper* read before the Missouri State Medical Association in May, 1929, I called attention to the importance of this consideration as essential to comprehensive diagnosis, prognosis and treatment of heart disease. I suggested a simple outline classifying organic heart disease etiologically as follows: (1) Congenital heart disease; (2) rheumatic carditis; (3) bacterial endocarditis; (4) thyrotoxic heart disease; (5) syphilitic cardiovascular disease; (6) hypertensive cardiovascular disease, and (7) degenerative cardiac states associated with general systemic disease, as arteriosclerosis, infectious disease, or foci of infection producing toxic myocardial degeneration, and the myocardial changes associated with emphysema, diabetes, nephritis, anemias, etc.

The importance of striving to arrive at a definite etiologic diagnosis of heart disease was stressed, with discussion of certain individual factors influencing the prognosis of these different types of heart disease. We believe that avoidance of such indefinite terms as "mitral regurgitation" or "myocarditis" would tend to crystallize our concept of heart disease. It would seem desirable to qualify such diagnoses

from an etiologic standpoint, which can frequently be done by carefully analyzing the history of past diseases and making a comprehensive physical examination so as to obtain evidence of systemic morbid processes known to have cardiovascular complications. Laboratory, electrocardiographic and roentgen ray studies naturally contribute their part to an etiologic survey. If we are to recognize heart disease in its earliest manifestations we must be alertly familiar with its clinical causes.

In June, 1929, a committee of the New York Tuberculosis and Health Association published the "Criteria for the Classification and Diagnosis of Heart Disease," in which the etiological diagnosis was emphasized and classified as follows: Unknown; rheumatic; syphilitic; bacterial; thyroid; toxic; neurosis; general systemic disease; traumatic, and congenital.

To summarize: Complete cardiac diagnosis should in every case be qualified by an etiologic diagnosis as nearly as it is possible to designate. The tendency is to lay more stress upon etiology and less upon physical features of certain heart murmurs, except where they point to the etiologic factor involved.

GRADUAL DEVELOPMENT OF A COMPREHENSIVE VIEWPOINT CONCERNING HYPERTENSIVE DISEASE

Inasmuch as the direct cause of vascular hypertension has not been discovered, progress in our knowledge of this disease has consisted largely in eliminating erroneous etiologic theories on the one hand, and on the other, the gathering of valuable clinical, pathologic and physiologic data on this widespread malady. Likewise, its biological significance from the constitutional standpoint, its relation to body habitus and to hereditary influence are now clearly manifest. This progressive constitutional disease usually begins in the third or fourth decade of life and ends by cardiac failure, cerebral hemorrhage or renal insufficiency.

Pathology has advanced arm in arm with if not a step in front of clinical study in evolving our concept of the hypertensive syndrome, from the early renal theory on through the "cardio-renal disease" period, and further into the "cardiovascular renal" era, a term still widely used, to the present concept of this disease expressed by the accepted present day term of "hypertensive cardiovascular disease." That these vascular changes are universal throughout the body has been clearly demonstrated by both autopsy and biopsy studies. Our clinical viewpoint has been crystallized to the definite conclusion that this disease is a vascular entity of some unknown etiology characterized by an initial functional spasm of the arterioles and

*Falk, O. P. J.: Etiologic Factors in Cardiovascular Disease.

contraction of the capillaries, later resulting in hyperplasia of the muscular coats of the arteries, followed by intimal hyperplasia at the expense of the vessel lumen and consequent tissue anemia and replacement fibrosis. The retinal vessels usually show some thickening, irregularity of the lumen, or tortuosity of the vessels, and often capillary hemorrhage (the so-called exudates), the "strapping" phenomenon where a thick-walled arteriole crosses a vein, and even optic nerve degeneration in more advanced cases.

The brain shows more or less vascular thickening even of the larger branches in more advanced disease. Besides hemorrhage from ruptured vessels, transitory anemic degeneration often occurs from cerebral angiospasm and then clears up after the release of this vasomotor spasm so often associated with this disease. Either clinical picture may clear up after re-establishment of efficient collateral circulation. But when there is permanent vascular occlusion, diffuse degenerations and anemic infarctions occur.

The first obvious cardiac pathology is generally hypertrophy, especially of the left ventricle. Later, dilatation follows as exhaustion occurs associated with coronary disease, again a part of the generalized vascular sclerosis bringing about localized anemic degeneration and replacement fibrosis in the muscle.

Apparently, the first lesion in the kidney is an arteriolar thickening of the afferent glomerular vessels. Later there appears connective tissue proliferation within the glomerular loops causing an anemic degeneration of the overlying epithelium, ending up in a scar. The tubules connected to the glomeruli atrophy and disappear. As the disease spreads the kidney shrinks in size with the formation of a granular surface. Anemic infarction of sclerotic capillary loops may occur and a slight infiltration of small round cells may be found, but there is no evidence of any reaction that cannot be explained by the progress of general arterial disease. There is usually hypertrophy of uninvolved glomeruli and their associated tubules as the disease progresses.

In 1931 Barker and Keith¹ announced that they had concluded a study of biopsy specimens from the pectoralis major muscle in more than 100 cases of hypertension.

These investigators showed that the walls of the arterioles are thickened and that the ratio of thickness of wall to diameter of lumen is definitely increased in most cases of malignant and severe benign hypertension and in some cases of chronic glomerulonephritis. In addition, other slight but definite changes in the

arterioles were noted in many of the cases. These consisted in increased prominence and tortuosity, increase in the number and size of the medial nuclei and increase in the number and size of the intimal nuclei. Less frequently, we have found actual organized thrombosis, extensive intimal proliferation, complete occlusion of the lumen and perivascular collections of cells in cases of very severe or fulminating hypertensive disease. There was considerable evidence that the changes seen were of a definitely organic nature.

Kinsella² showed that in cases of severe hypertensive disease with retinal hemorrhage there was a constant association of arteriolar thickening with diminished lumen and frequently capillary hemorrhage in sections from the subcutaneous tissue of the abdominal wall.

Pathological studies of Bell and Clawson,³ comprising 420 cases of primary vascular hypertension, is a valuable survey because they showed that although the renal parenchymal arteries showed hyperplastic intimal thickening of varying degrees in 97.6 per cent of the cases, only 8.5 per cent of the cases died with uremic symptoms. They found myocardial insufficiency including coronary disease responsible for 60 per cent of the deaths. In a series of 100 autopsied cases at Cleveland City Hospital, Scott⁴ found myocardial failure to have been the cause of death in 68 per cent, cerebral accident in 22 per cent and renal insufficiency in 10 per cent.

Keith, Wagner, and Kernohan⁵ stressed the characteristic histologic picture in so-called malignant hypertension as showing a diffuse generalized hypertrophy of the arterioles and termed the picture as one of simultaneous rapid functional failure of the brain, heart and kidneys.

This disease complex is apt to come on earlier in life than the benign process and is characterized by early cardiac, renal and cerebral manifestations, very frequent early renal failure, early neuroretinitis and usually a very high diastolic pressure. This disease like diabetes seems especially vicious in the earlier decades of life.

The influence of pathologic and physiologic investigation on therapy of hypertensive disease should be to stress the general constitutional measures rather than follow the time honored course of dietary and eliminative measures designed to protect and spare renal function. Thus we see the utter futility of the meat free or red meat free diet or salt free diet, the abuse of catharsis and sweating that so characterized former therapeutic endeavors in this type of case, a habit that unfortunately still survives.

A failing heart is oftentimes neglected because an albuminous urine is regarded as evidence of Bright's disease rather than chronic passive congestion developing in the course of hypertensive disease.

THE DEVELOPMENT OF OUR KNOWLEDGE AND RECOGNITION OF CORONARY DISEASE

One of the most important causes of cardiac failure or death in the fifth and sixth decades particularly is coronary disease and its sequelae. The heart muscle receives its blood supply from the two coronary arteries which spring from the root of the aorta. With advancing years the coronary arteries become thickened and hardened and the delicate intimal lining becomes roughened and scarred and the lumen narrowed. If the process goes no farther we may have chronic incomplete coronary occlusion with probable gradual development of collateral channels through arterial anastomoses and the thebesian vessels, to compensate for the lost blood supply. The patient meanwhile is a symptomatic or perhaps complains of vague, indefinite substernal distress or even mild anginal symptoms, or sometimes only of progressive effort dyspnea. But if thrombosis at the site of constriction or ulceration takes place, complete occlusion ensues with the myocardial infarction so frequently fatal. In less than 10 per cent of cases is coronary occlusion due to closure of the coronary openings because of syphilitic aortitis. Barnes and Ball⁶ found an incidence of nearly 5 per cent myocardial infarction in 1000 unselected postmortem cases at the Mayo Clinic. In 685 cases of those over forty years of age there was nearly 7 per cent. A majority of the cases of infarction had hypertension. Gross infarction was practically confined to the left ventricle.

More than 90 per cent of all individuals dying suddenly, death coming within five to ten minutes from the time they seemed in customary health, will show at autopsy a cardiac lesion, either coronary thrombosis or rupture of the heart at the site of former infarctions or occasional rupture of the aorta. Very rarely are cerebral hemorrhages fatal within a few minutes. In spite of these well established facts one still hears erroneous reports of sudden death due to "acute indigestion," because of the vomiting and epigastric pain so frequently encountered in coronary thrombosis. Ventricular fibrillation frequently ensues from sudden ischemia of the heart muscle with consequent fatal circulatory collapse.

The cases that survive the initial attack, coming on with severe angina like pain, must be distinguished from angina pectoris which is rather

generally conceded to be caused either by a transient coronary angiospasm or inability of the coronary vessels to dilate with the increased demand of exertion, but without the permanent occlusion that occurs in thrombosis.

The syndrome known as angina pectoris is well recognized, lasting from a few minutes to half an hour; it usually follows strain or exertion. The pain varies from light to extreme vise like constriction of the chest. It may be localized over the sternum, usually upper or middle third, more rarely the lower third, or over the fourth and fifth interspace in the precardium. Pain may be referred to the left shoulder and axilla, frequently down the inner aspect of the arm to the elbow, wrist and little finger. Occasionally it is referred to only part of the area, as the wrist or inner arm. Sometimes the pain is referred to the posterior and lateral left neck and to left lower jaw, and rarely do we see cases with pain referred to both arms, or right arm alone. There is no dyspnea as in thrombosis; the pulse rate and blood pressure are unaltered and it is relieved by nitrates. On the other hand, an attack of coronary thrombosis lasts much longer and often comes on during rest. The patient is shocked, pallid, often vomits, the blood pressure is markedly lowered and nitrites are ineffective. This is followed typically in one to three days by a slight rise in temperature, a mild leukocytosis, and frequently a pericardial friction rub. Fatal cases succumb from the sudden shock, from heart block, rupture of the heart or ventricular fibrillation.

In surviving cases, the pain is frequently epigastric and associated with marked rigidity and must be carefully differentiated from perforated gastric ulcer, acute pancreatitis or perforated gallbladder. Treatment is morphine in repeated and adequate dosage, avoidance of the vasodilators, amyl nitrite and nitroglycerin, followed by prolonged complete mental and physical rest for at least a month.

The liberal use of dextrose is useful and rational. Dextrose is the substance into which all carbohydrates must be converted before being utilized by the body and requires neither digestion or chemical change for assimilation. We have been using dextrose as a routine part of our treatment for myocardial insufficiency following coronary occlusion for the last three or four years and found it very helpful in augmenting the action of rest, medication and other measures. Digitalis is probably contraindicated in the early stages of recovery but later is frequently useful. The xanthine derivatives, particularly theophyllin ethylene diamine (metaphyllin) is a useful drug in doses of three

grains, four times daily. It has been shown by Smith and Miller⁷ to increase the rate of coronary perfusion in the intact rabbit heart from 40 to 90 per cent, and by Musser⁸ to possess definite coronary dilating power.

The milder types of coronary occlusion or "occult coronary cases" are the ones that should be given more careful study, for judicious care and treatment of these cases will frequently prevent the occurrence of the major episodes. The development of electrocardiographic investigation in this field has tended to crystallize our clinical concept of this syndrome. In 1919 Herrick⁹ began to call attention to certain changes which he regarded as indicative of coronary occlusion with myocardial infarction. A little later Pardee¹⁰ called attention to changes in the T waves and S-T intervals in coronary occlusion. Since this time electrocardiographic changes in this disease have been widely observed and discussed. In a recent study of 47 postmortem cases in which electrocardiographic findings had indicated coronary disease or myocardial infarction, Barnes¹¹ found that 100 per cent showed involvement of the left ventricle, the four cases that showed right ventricle involvement were apparently incidental to an extensive left ventricle thrombosis. This study would indicate that infarction of the right ventricle is practically negligible in occurrence.

The increasing attention coronary disease is receiving as an important cardiac entity has been gathering momentum each year since the syndrome was first so graphically and comprehensively described by Herrick¹² in 1912. Many carefully controlled clinical and laboratory studies have resulted in an increasing number of hitherto vague or improperly interpreted cardiac syndromes, being enrolled in the increasing category of coronary sclerosis, especially of the obliterative endarteritis type. Among these are many cases of so-called "chronic myocarditis" and certain of the arrhythmias, paroxysmal tachycardia, paroxysmal nocturnal dyspnea, not otherwise explained by history of antecedent heart disease of known etiology, excepting perhaps a history of hypertension. The symptomatology of this syndrome may vary from vague indefinite sensory phenomena to frank evidence of decompensatory circulatory failure.

Sensory phenomenon.—Apart from the well recognized more typical syndrome, we have come to recognize the following symptoms as suggestive of coronary disease: epigastric pain; burning or pressure sense; vague substernal discomfort; precordial ache; paroxysmal pains in the throat, or even in the neck or occiput or aching pains in the wrist. The purely sub-

jective sensory phenomena may or may not be associated with other episodes such as cardiac fluttering, paroxysmal nocturnal dyspnea, unaccustomed dyspnea on only mild exertion, developing insidiously without known cause or circumstance. The one characteristic of their early sensory phenomena is their relation to effort or strain, be it physical, mental or emotional. Thus the relation to overload from exertion, eating, coitus, or emotion is an important diagnostic criterion.

Disturbances of rhythm.—Paroxysmal tachycardia, runs of premature systoles coming up in an adult heart previously symptom free and not showing any of the anatomical landmarks of antecedent cardiac disease without an apparent cause, such as toxic goitre, is an extremely suspicious circumstance that must be considered as of coronary etiology until proved otherwise. Fibrillation coming on in uncomplicated vascular hypertension is more often than not the effect of a sublethal coronary occlusion.

That coronary disease should be more frequently present than we have hitherto suspected is not surprising, when we consider the fact that arterial degeneration in general is the inexorable and universal result of the aging process through the later decades of life. That this deterioration should so frequently involve the coronary vessels is not surprising when we consider the fact that the coronary vessels are the first and most important branches of the aorta and share first hand all of the shocks and strains of that great primary vessel. Then again the cardiac muscle is never resting, and being always active should be affected promptly by any impoverishment of its blood supply. Furthermore, Werley¹³ states that the coronary vessels are sclerosed twice as often as the cerebral vessels and three times as often as the renal ones. It would seem therefore not unusual for disease of the coronary vessels to be one of the most frequent causes of myocardial weakness.

The diagnosis depends mainly upon careful analysis of the history of the time, association and character of the attack, supplemented by such laboratory findings (roentgen ray and electrocardiographic) as seem necessary to corroborate the clinical diagnosis.

The proved incidence of certain characteristic electrocardiographic changes of coronary disease occasionally are a help in the clinical interpretation of this difficult problem. However the electrocardiogram is not by any means the final authority in all ailments of the heart nor is it, on the other hand, an impractical academic test. It does not, as some physicians have imagined, replace the clinical diagnostic measures.

It is useful as an augmentative factor in the following types of cases: (1) Obscure arrhythmia not accurately definable by clinical measures alone; (2) in certain cases of suspicious myocardial disease; (3) the diagnosis of incomplete heart block; (4) crystallizing the diagnosis of certain suspicious coronary cases.

DEVELOPMENT OF DEFINITE CRITERIA WHICH
DESIGNATE THE PATHOLOGIC HEART

The diagnosis of heart disease is one that is all too frequently and thoughtlessly made because of the presence of physical findings having no genuinely pathologic or physiologic significance, being misinterpreted as evidence of heart disease. One of the most shocking experiences that an apprehensive patient can have is to be told by a physician that he has heart disease, a mental hazard which overhangs him through life.

All too frequently the presence of a meaningless systolic murmur at the apex is interpreted as "mitral regurgitation" and reported to the patient as a "leaking valve," with dire warning as to the uncertainty and gravity of the prognosis.

A great many of the objective heart signs as elicited by physicians and generally accredited to indicate the presence of heart disease, are found when checked by careful postmortem examination to have had no significance. This refers particularly to the diagnosis oftentimes made of mitral regurgitation because of a systolic murmur which can be heard in the region of the apex, without substantiating evidence of mitral regurgitation, either from additional physical signs, such as cardiac hypertrophy, accentuation of the pulmonic second or from a history pointing to some likely etiologic factor that might account for the condition found. The frequent diagnosis of mitral regurgitation is one of the outstanding errors in the interpretation of heart findings of ordinary clinical medicine. The reason for this is probably because of the frequency of apical systolic murmurs in noncardiac disease as well as in health. Roger Lee¹⁴ in examining healthy Harvard students over a period of years found that 70 per cent of normal individuals showed a definite systolic murmur over the heart in the recumbent position after expiration. When a loud functional murmur happens to be associated with a patient who has a so-called effort syndrome, with all its complement of precordial pain, fainting spells, subjective dyspnea or any of the various nervous manifestations of this condition, a diagnosis of mitral regurgitation is frequently made and this patient may be relegated to a life of introspective caution; in other

words, made a heart conscious invalid. He is fearful of physical effort, is denied insurance and develops a fear complex which warps his perspective and curtails his efficiency.

Other conditions apt to be associated with a systolic murmur at the apex without mitral lesion are murmurs found in older people, either at the apex or at the base, particularly related to arteriosclerosis or dilatation of the aortic arch, but bearing no relation to mitral valve insufficiency, as stated above. Likewise, such states as fever and anemia are also associated with transient systolic murmurs without organic significance. Beyond doubt, stretching of the muscular ring of the mitral valve from dilatation does occur, producing systolic apical murmurs, but even in these cases there is usually some etiologic factor in the background, such as hypertension, thyrotoxic state or a chronic adhesive pericarditis. In acute or subacute bacterial endocarditis with ulcerative lesions pure regurgitation can take place, but in these conditions the infectious nature and other characteristics of the disease usually are sufficiently manifest to not becloud the issue for long. The reason that most cases of rheumatic mitral endocarditis lead to stenosis rather than to pure regurgitation appears to be that most of the soft vegetation of this disease is deposited near the free margin of the valve. When these become organized and healed into scar tissue the adhesions pull together the contiguous parts of the mitral orifice like a purse string, thereby producing stenosis, with of course some degree of regurgitation as well.

Cabot found in his study of over 1900 heart cases at autopsy that a third of the cases of actual mitral disease found at postmortem examination were not recognizable during life, and furthermore found that such a proportion of cases diagnosed "mitral regurgitation" during life were not substantiated by postmortem evidence of mitral valve pathology, that he actually characterized the diagnosis of "mitral regurgitation" as clinically nonrecognizable. I feel that this statement should be somewhat modified, for a careful clinical diagnosis in private practice, with an accurate history of any significant infection; a careful physical examination together with fluoroscopic, radiographic and electrocardiographic evidence, coupled with a judicious interpretation of any of these positive findings should result in a fairly accurate diagnosis in a large percentage of cases. Cabot's figures, which were obtained by the retracing of hospital records from autopsy protocols, are not particularly representative of the careful clinical analysis of a cardiac suspect conducted by modern internal medicine.

The diagnosis of "myocarditis" is another diagnosis frequently made and carelessly designated. This condition is probably not clearly recognizable in a good many cases. Post-mortems usually disclose other and more important cardiovascular lesions. In the absence of findings of actual cardiac infarction or certain infectious diseases, or definite electrocardiographic evidence, this diagnosis is seldom justified, except by inference. The term "myocardial insufficiency" is probably more consistent with the facts obtainable in these cases of rather vague, indefinite heart failure.

It will be recalled that in the latter part of the nineteenth century it was the physical signs of heart disease which occupied the minds of the profession and the aim was to correlate the physical signs with the gross pathologic changes present. This attitude dominated clinical investigation. Now with the swing of the pendulum the cross examination of a patient is often considered even more important than the physical examination, and both are made with the object of obtaining a clear conception of the functioning power of the organ in question, whether that organ be the heart, the kidneys, the pancreas or the liver. For any organ may be gravely inadequate and yet present few if any objective signs of disease. Then again it must be remembered that symptoms constitute the earliest manifestations of disease more often than physical signs. There is some subjective deviation from the normal, such as discomfort, pain, dyspnea, exhaustion or lassitude. The elucidation of the meaning of such deviations from the normal and their prognostic significance was the aim underlying all the work of the eminent heart authority, Sir James Mackenzie. He, more than any other man, excepting possibly Osler, focused the attention of the world of medicine on the subjective aspect of disease.

The most reliable objective criteria of organic heart diseases are: (1) Increase in the size of the heart; (2) arrhythmias of the truly significant type; (3) alterations of heart sounds, such as gallop rhythm, accentuated sounds and murmurs; (4) roentgen ray demonstration of changes in cardiac contour, position, size and action; (5) the presence of thrills or diastolic shock; (6) gross inconsistency between the strength and vigor of an apex beat and the character of the radial pulse; (7) electrocardiographic findings.

RECENT DEVELOPMENTS IN THE TREATMENT OF HEART DISEASE

In enumerating some of the newer developments in the therapy of cardiac decompensation,

it will not be amiss to mention in passing some of the well established fundamental principles that have stood the test of time because of their sound adherence to principles of pathologic physiology. Included are such measures as absolute rest in a semireclining position in the majority of cases, the value of sleep induced by an adequate narcotic for the reason that sleep not only rests the patient physically and mentally but that morphine actually cuts down metabolic demand on the circulation. The use of a readily assimilated high carbohydrate diet because of the amount of readily available energy it supplies with the least expense of digestive effort is imperative. This is particularly true of the use of powdered dextrose, which we use to the amount of 100 to 200 grams per day, giving it with cereal gruels, to sweeten sour lemonade, or taken dry from a spoon. We have modified the original Karell diet, used in congestive heart failure with marked edema or anasarca, by replacing the 800 c.c. of milk with 400 c.c. of milk (with the addition of dextrose) and 400 c.c. of "dextrose lemonade." This consists of 60 grams of powdered dextrose, the juice of two lemons and 400 c.c. of water. After the output begins to exceed the intake and signs of restoring compensation ensue, we increase the total fluid intake to 1200 c.c. and add light easily digested carbohydrates.

It is probably superfluous in this advanced stage of our knowledge of digitalis action to emphasize the necessity of adequate dosage. The Eggleston method of giving a total of 1.5 c.c. of standardized tincture, or $1\frac{1}{2}$ grains of standardized leaf for each ten pounds of body weight, distributed over the first forty-eight hours is widely used. We modify this by giving 1 c.c. to each 10 pounds of body weight within 48 hours. It would not be amiss to emphasize the futility of giving 1 or 2 c.c. ampoule of digitalis intramuscularly or intravenously to meet an impending cardiovascular collapse. In the first place the dosage is inadequate, it having been shown by Pardee that digitalis intramuscularly or even intravenously is required in almost the same dosage as in oral administration to be truly effective. Even the action of intravenous digitalis is not as prompt as necessary in a real emergency. We find that the most effective emergency remedy in acute heart failure, whether of the congestive or coronary type, is an intravenous injection of 7 grains of caffein sodiobenzoate in 50 c.c. of 50 per cent dextrose, taken directly from the ampoule.

The need for a rapidly acting circulatory and respiratory stimulant has long been felt and numerous drugs have been employed in the attempt to meet this need. Camphor in oil, for-

merly quite popular, has been shown to have no favorable action on the heart and to influence the respiratory center directly only when given in toxic doses. Strychnine is a very feeble and uncertain respiratory stimulant and does not increase cardiac efficiency except in a concentration which would cause death from action on the central nervous system. Strophanthus is a very rapid cardiac stimulant and is sometimes quite effective in 0.5 milligram doses given intravenously with 25 to 50 per cent glucose.

During the ten years following the introduction of quinidine for the restoration of normal rhythm from auricular fibrillation, ample opportunity has been afforded for the clinical study of this drug. The greatest contraindications to the use of this measure are in the presence of decompensation, susceptibility to quinine or quinine derivatives, history of emboli and marked cardiac dilatation with evidence of very limited cardiac movement as viewed in the fluoroscope. In a recent survey of seventy cases, Wolfe and White¹⁵ restored the normal rhythm in 65 per cent. They found the most satisfactory patients to treat are those where permanent auricular fibrillation occurs in apparently otherwise normal hearts. The next in responsiveness are the patients with rheumatic heart disease at less than forty years of age. The duration of fibrillation less than a month offers a very favorable prognosis. Etiology on the whole seems to have been of minor significance in the response to quinidine therapy.

The use of purin base diuretics (or xanthine derivatives) taken as a whole is based on experimental work concerning the effect of salts of theobromin and theophyllin on the volume flow of the coronary arteries, which points definitely to a vasodilator action of these drugs. Because of the apparently good clinical results and because of the previous experimental work which could not be considered altogether conclusive, Gilbert and Fenn¹⁶ attempted further experimental work on this subject and found a vasodilator effect on the coronary arteries as shown by increased flow through the coronary sinus of experimental animals, with doses corresponding to the average human doses in the following order of efficiency: theobromin and its salts, theophyllin ethylene diamine, theophyllin sodium acetate and caffeine.

F. M. Smith¹⁷ advocates the use of theophyllin in practically all cases with arteriosclerotic features whether edema is present or not, although the best results have been obtained in the presence of congestive failure. In the rheumatic type of heart failure seen in younger subjects he found the results not so satisfactory, indicating that the beneficial effects of theo-

phyllin can partly be attributed to its favorable influence on the coronary circulation. In our experience, the combination or alteration of theophyllin with adequate maintenance doses of digitalis offers the best solution for maintaining compensation in cardiosclerotic cases. In certain cases of gastric intolerance to digitalis, its adaptability to rectal injection is often overlooked. It would be well to bear in mind a frequent source of error arising from the use of digitalis, measured by a dropper. Drops from very few droppers anywhere equal a minim and it is therefore essential to measure digitalis by using a minim glass or hypodermic syringe.

The use of sodium sulphocyanate as employed for the reduction of blood pressure in average dosage of $2\frac{1}{2}$ grains three times a day is moderately effective in the earlier stages of vascular hypertension but seems definitely contraindicated in our experience in the presence of myocardial disease as well as in the presence of renal decompensation. In our observation severe cardiac palpitation is very apt to occur when this drug is administered to patients presenting evidence of cardiac disease whether decompensatory or anginal in character. In very early cardiac syndromes such as those occurring in hypertensive disease, we find the combination of sedatives such as $\frac{3}{8}$ grain of luminal with 3 grains of theophyllin ethylene diamine after meals to be the most effective measure. We have not been favorably impressed with the bismuth subnitrate treatment of hypertension.

Heart block has been treated successfully by the use of barium chloride 30 milligrams, $\frac{1}{2}$ grain, t.i.d. because of its effect on increasing irritability of the ventricles. Blackford and Willius¹⁸ in 1917, advocated the use of thyroid extract, because of its effect in increasing circulatory rate and volume output of blood. Often adrenalin $\frac{1}{2}$ c.c. has to be given hypodermatically two or three times daily.

The use of salyrgan intravenously in treatment of anasarca or lesser congestive phenomena not responding to digitalis, rest, limited fluid intake and the xanthine derivative, has won a well merited place in cardiac therapy.

THE HEART AS A FACTOR IN SURGICAL RISK

E. S. Kilgore¹⁹ in discussing the basis of estimating the ability of the myocardium to withstand surgery, states that all the designated clinical methods for estimating surgical risk such as roentgen ray and electrocardiographic studies are not as important as a careful history of the ability of the patient to meet comfortably sudden physical strains or the endurance tests of ordinary life.

The relation between blood pressure and the

surgical risk is significant. Systolic pressure may be high without materially increasing a surgical risk if the diastolic pressure and heart size are nearly normal, kidney function good, and effort well tolerated. High diastolic pressure, however is a warning signal, especially when associated with cardiac enlargement, limitation of effort and other evidence of myocardial impairment.

Disturbance of the heart beat mechanism implicates the myocardium directly. Simple premature contractions are in themselves of little moment. Paroxysmal tachycardia and fibrillation indicate myocardial disease but this may be trivial and each case must be judged individually. Especially important is the capacity for effort during abnormal heart action. Pulsus alternans or coupled rhythm in a comparatively slow heart is always a bad prognostic omen. One should beware of surgery where the sounds suggest a feeble musculature or certain gallop rhythms suggest bundle branch block.

We are gradually realizing that in spite of definite clinical, electrocardiographic and roentgen ray evidence of cardiac disease, most patients will stand necessary operative procedure if they are able to carry on the average daily routine without definite incidence of circulatory insufficiency such as pain, breathlessness on effort, paroxysmal nocturnal dyspnea or evidence of congestive phenomena of heart failure such as edema at the pulmonary base with cough, hepatic enlargement with digestive disturbances, or marked static edema of the ankles and legs.

517 Beaumont Medical Building.

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DISPENSING AS AN ART

J. F. CHANDLER, M.D.

OREGON, MO.

My purpose in presenting this paper is two-fold, (1) to make known certain ideas that I consider worth while, and (2) to bring forth discussion of the subject. By this means I hope that all in attendance may be benefited by bringing to light much hidden lore on the subject.

Before taking up the subject proper I shall give several reasons why I think the physician should dispense the medicines he uses in his practice. If there are sufficient reasons to support my contention, it is unquestionably just as important that he become an artist in dispensing as that he should be an artist in the use of the scalpel.

To be successful in dispensing requires concentration in thought—the ability to use one's head—as much as in other lines of endeavor. You should know the stuff you dispense, just as you should know the actual condition of the patient mentally, physically and socially, that you may be able to dispense what is needful to bring about the result desired, whether it be through medicine, hydrotherapy, thermotherapy, physiotherapy, good cheer, or any therapy. How are you to know the agents you make use of in your practice unless you become familiar with them?

I realize that there may be physicians who will not care to make the effort required for preparing the medicine to be given their patients. They are averse to the use of mortar and pestle, to filling capsules, measuring out and mixing fluids, preferring to dispense tablets and proprietary compounds ready for dispensing, regardless of the exactness of the dose required for the individual for whom the medicine is intended. The fact that the medicine on the shelf may be about what is desired and that it is pleasant to take or easy to hand out, is considered sufficient.

Dr. Fishbein, in a recent article, has this to say: "Most young girls learn to cook with a can opener." Likewise many young and some of the elder physicians prescribe canned goods in original packages.

No two persons are alike in every particular

Read by title at the 75th Annual Meeting of the Missouri State Medical Association, Jefferson City, May 23-26, 1932.

and the condition of each may vary from day to day. It is needful that these varying conditions be properly met. As an artist mixes his various pigments in proper amount to produce colors, shades and shadows for the best effect, so should one dispensing medicines endeavor to put into the prescription the ingredients in proper proportion for individual needs. This may be done if the doctor takes the time and gives the necessary thought to bring about the desired result.

I recall vividly a lesson in McGuffey's Fifth Reader which I studied when a child. To quote from it: "There is no excellence without great labor." So if you would become an artist in the line of dispensing you must give time, attention and careful study—and it is worth the effort. In fact, the work is interesting and as you advance in it the more interesting it becomes. In dispensing, as in mountain climbing, the ascent of each higher peak unfolds a wider vista.

At a meeting of a county medical society which I attended about one year ago I heard a physician make this remark: "Oh, medicine is all a frost." I responded by saying: "The more you know about anything the more interesting it becomes, and there is much to any science, did we understand it."

It is well to keep the drugs you dispense on shelves apart from the waiting or consulting room and not permit the patient to approach you while dispensing. Some are curious to know what is going into the prescription and approach the shelving to scrutinize the bottle from which you remove the drug. If they are not successful in learning on first approaching they make a second attempt to learn the name, and may later endeavor to ascertain from a druggist the cost of the material which goes into the bottle. In many instances it is better for the patient not to know what he is taking. However, that is not the only thing to be considered. If your business is too well known by others, some one is going to capitalize on your knowledge while you are living and perhaps for years after you are dead. Personally, I keep a record of medicines dispensed, a record of procedure in preparation, if called for, and other information required about the patient. Having them properly indexed, it requires little effort to find the prescription when a refill becomes necessary. Today many ailing persons are going to drug stores for remedies for every known ailment, and they are being supplied with treatment—hand-me-downs—for their complaints.

While it may seem to some persons that I have a selfish motive in presenting this paper, I think it will become plain after a little thought that what I have to say is for the welfare of

the patient as well as for the protection of the physician.

It frequently happens that medicine prescribed is given to prepare the way for a course of treatment which the patient never receives, owing to the fact that he does not return to the physician for further treatment and direction as to the course he should follow. Instead, he returns to the drug store and has the prescription refilled, continuing the medicine without seeking the advice of the prescriber. In many instances the person taking the medicine is unaware of the danger of continuing the use of it, thinking that if it was suitable for his condition at the time it was prescribed he should continue to take it. He loses sight of the fact that one's condition may change from time to time, being largely influenced by environment, food consumed, labor performed, condition of the atmosphere, etc.

Under the drug-store system a patient to avoid the expense of an office fee, may have the prescription refilled, continuing to take the medicine at a stage of the disease where it should be discontinued; or with the intention of passing it on to others for whom it is unsuitable.

In what manner does this refilling of the prescription affect the prescriber? It robs him of that which justly belongs to him, his fee. It may result in the loss of his patient and injure his reputation. However, the most unfortunate part of the business is that people without knowledge, or with little knowledge of the ailment they are trying to cure, may endanger their health by continuing to dose themselves with drugs with which they are not familiar.

The layman possessing little or no knowledge of indication or contraindication for the agents he would use, should for his own protection be required to seek advice of those especially qualified. Why should he be permitted to drug himself to death, unknowingly perhaps, and yet be penalized for an attempt to end his existence by shooting?

I have known patients to take a specimen of the medicine obtained from a physician to the druggist and request that he duplicate it, hoping in this way to take advantage of the physician and obtain treatment for themselves or relatives without going to the expense of consulting the physician. I have known them to succeed in obtaining what purported to be the same kind of medicine, and heard a woman say that she had obtained the medicine from a pharmacist for much less than the doctor charged. She knew, or at least thought she knew, that she had received the same kind of tablets that the doctor had given her, and it was useless to attempt to reason with her.

A natural sequence of thought leads one to consider the druggist who continues to refill prescriptions calling for drugs which accumulate in the system, producing in time dangerous symptoms and perhaps death; or who sells heart tonic tablets to the individual diagnosing his ailment as heart trouble, perhaps giving nitroglycerin when digitalis is indicated, or tablets of digitalin to the individual suffering from too much digitalis—tablets which increase the work of a heart already overworked, depressants when stimulation is needed. The list could be enlarged to take in all drugs therapeutically active, none of which should be used indiscriminately.

One in general practice does not need a great many drugs, but he should have a thorough practical working knowledge of the chemical and pharmaceutical nature as well as a knowledge of the therapeutic action of those he uses. I am led to believe that through constant study and nicety in discernment in handling our remedial agents results will be far better.

By association with and constant handling of the medicines we prescribe we come to know each ingredient in a compound, to identify each mixture or drug readily; we become familiar with the chemical and pharmaceutical nature, compatibility and palatability of the drugs we use, as well as the appearance of the finished product which, if it proves to be uncommonly nauseating or unsightly, we can alter or dispose of before delivering to the one in waiting. "Daintily served" may mean as much in giving medicine as in serving food. It is just as well to give attention to compounding the prescription so that the medicine may be inviting instead of disgusting. This, indeed, may have much to do with gaining the good will of our patient and helping smooth out the wrinkles along the way.

The trend is to become more exact in dosage and to become more exact is to simplify and to simplify means to do away with polipharmacy. The shotgun prescription is almost a thing of the past and is seldom seen in other than proprietary or semipatent formulae. And, as our knowledge of the cause of disease broadens and the ability to diagnose the trouble improves the multiplicity of the ingredients in a prescription becomes less and dispensing becomes more simple.

I recall with little pleasure my experience with two druggists on my return to Holt County a few years ago to resume the practice of medicine. It had been my custom to follow the teaching of early years in college by writing the prescription in accordance with the rule: 1. Base; 2. Adjuvant; 3. Corrective; 4. Vehicle. The druggist to whom the prescription was pre-

sented began looking over his shelves for the ingredients called for in the prescription, and finally let go the remark: "This ought to do you some good; it has damn near everything in the store in it." Another druggist commented on a five grain dose of calomel as: "A hell of a big dose for a child." It happened that the calomel had been prescribed for a child who had been vomiting for several days and, as the vomiting stopped after the first dose taken, the father was pleased so the remark failed to hurt as it might have done had the result been otherwise.

The experience just mentioned is of course very unusual and the remarks were made by druggists in a country town who had little experience with the public, and perhaps with no intention of harming anyone. I find most pharmacists good fellows, who fill prescriptions correctly, without comment, and who are well worthy of the patronage accorded them.

I dispense because I prefer to know what is delivered to my patient. If there is any repeating to be done I have knowledge of it and am able to learn something concerning the individual taking the medicine. Furthermore, by this means I keep in touch with my customer.

That I may make known to you some of the methods I would suggest as a means of defeating the purpose of those who would procure medicine from the druggist by exhibiting a specimen taken from the medicine supplied by the physician, for the purpose of tricking the doctor, securing the medicine for less money, or passing it on to friends, I herewith offer an exhibit, going somewhat into detail as to the preparation of the specimens I show you. Many old favorites can thus be changed in appearance without affecting in any way the therapeutic action of the medicine. Several well tried compounds, readily recognized by the laity from previous use, may by a little brushing up, so to speak, be so altered in appearance as to be unrecognizable by those who would seek to discover what is given to them. It is better for some individuals that they should not know what they are taking, especially those who may look on the physician as an old foggy—not up-to-date—should they be able to recognize some of the useful mixtures which physicians have prescribed for years with results perhaps that they are unable to get from more modern compounds.

It would be futile to go on and describe fully each procedure in compounding, as it would make this paper too long, hence I shall content myself with mentioning in a general way a few of the things made use of in changing the appearance and improving the taste of various compounds I will show to you.

I have found tincture of benzoin useful for coloring ointment of zinc oxide, cold cream, etc. You may change the color of ointments made from petroleum products by the use of tablets of hydrocarbon red. Tincture of cardamon compound may be used to dilute fluid extracts, improve the taste of tinctures, color and improve the taste of mineral waters. No doubt many of you are familiar with the coloring tablets made use of in coloring aqueous and alcoholic mixtures. A little magnesium oxide light, extract of licorice, powdered cocoa, with a drop or two of oil acacia, may disguise acetylsalicylic acid, eliminating the odor, etc., as well as making it more acceptable to the stomach. As your experience in dispensing increases and your knowledge of chemistry and pharmacy improves you may think of many changes you can make to alter and improve the appearance, taste and therapeutic action of the drugs and mixtures you use in your practice.

By consulting drug salesmen who visit you you may procure granules of various colors and dosage, as well as tablets for dispensing in solution, which you can carry in your medicine case and dispense in the home.

We meet patients occasionally who have been accustomed to taking medicine frequently, perhaps at one half or two hour intervals, and if we fail to take notice of this peculiar habit and give medicine at six or eight hour intervals, as we may digitalis or slow-acting cathartics, these individuals are not satisfied, so it is well to carry in the medicine case a placebo to drop in between for the purpose of putting the mind of the patient at ease. I carry in my case granules resembling homeopathic remedies which I find useful. The dose is small and may be given at short intervals, as the case may require.

Having in stock the U. S. P. preparations, along with tablets of a given weight for dispensing, all put out by a reliable manufacturer, the doctor is in a position to supply the medicine in suitable dosage and, if he so desires, to change the appearance of many of the compounds without altering their therapeutic action when he dispenses them under his label.

When preparing medicine think of the better way, not the easier way. And the psychology of color and quantity, as well as taste and smell, is not to be forgotten. Mixtures with color are thought by many to cost more, and quantity is more satisfactory to some persons even though the dose be larger.

To those who have not been dispensing, the question how to become efficient in this line of work, may be answered by quoting Grimshaw on efficiency, viz.: "There is no one definite method of attaining any one kind of efficiency;

much less, any one definite means of achieving all the kinds thereof. There are, however, some means which aid in attaining all kinds: study, counsel, imitation and practice, each embracing many subdivisions and capable of many applications, even of several definitions, according to the application intended."

He says also, "To keep a thought alive, we must keep on doing something with it." Therefore, we should keep our mind on our dispensing, being mentally alert at all times, and as time passes we become more efficient and can rejoice in the fact that we are not dependent on others for remedial agents which may or may not be in stock in the drug store and if not in stock compelled to take what another may tell us is, "Just as good."

METABOLISM OF ALCOHOL

H. E. Himwich, L. H. Nahum, Nathan Rakieten, J. F. Fazikas, Delafield Du Bois and E. F. Gildea, New Haven, Conn. (*Journal A. M. A.*, March 4, 1933), point out that the ingestion of 10 c.c. of 19 per cent alcohol per kilogram of body weight by human subjects and of 50 c.c. per kilogram of body weight by dogs is followed by an acidosis. This acidosis is probably the result of two factors: a relative retention of carbon dioxide and the accumulation of lactic acid. The alkali reserve of the body is diminished because of this accumulation of lactic acid. In patients suffering from the after-effects of overindulgence in alcohol—the so-called hangover—there was an increased content of lactic acid in the arterial blood. The brain, which usually derives its energy from the oxidation of carbohydrate, may nevertheless also oxidize alcohol.

OBLITERATING SYPHILITIC ARTERITIS

Lyle Motley and Robert Moore, Memphis, Tenn. (*Journal A. M. A.*, March 4, 1933), believe that their case of a white woman, aged 29, is worthy of reporting because the patient presented unusual clinical observations, particularly the discrepancy in blood pressure between the two arms. This seems the more true, since nothing can be found in the literature regarding obliteration of isolated large vessels from any cause since 1925. Such isolated oblitative lesions should probably be considered clinically and sought for more diligently at necropsy than has apparently been the custom in the past, since they can easily explain unusual and at times vague signs and symptoms for which no basis can be found clinically. Oblitative lesions of the carotid from atheroma and thrombosis resulting in cerebral and other neurologic manifestations are reported. It is conceivable that similar processes, whether from syphilitic lesions or other conditions, could easily cause vague visceral disturbances, such as unexplained abdominal symptoms. Syphilitic involvement of the pulmonary vessels in the form of Ayerza's disease is being recognized clinically and reported with greater frequency. It is entirely possible that instances of oblitative vascular lesions causing other clinical manifestations will be reported with greater frequency as such conditions are more frequently brought to one's notice and necropsies are more regularly and more thoroughly done.

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JULY, 1933

EDITORIALS



CAIUS T. RYLAND, M.D.

President-Elect, Missouri State Medical Association, 1933-1934

Dr. C. T. Ryland, Lexington, was chosen by the House of Delegates of the Missouri State Medical Association at the Kansas City Session to serve as President-Elect during 1933-1934 and as President during 1934-1935.

Dr. Ryland is not only a native Missourian but is a native of Lexington. He was born in Lexington on April 20, 1874, and attended the public schools there and the Wentworth Military Academy.

He received his degree in medicine from the Beaumont Hospital Medical College, St. Louis, in 1897 and served as intern in St. Mary's Infirmary under Dr. W. A. McCandless the following year.

In 1898 Dr. Ryland began his practice of medicine in Lexington and has remained in practice there. He has taken several postgraduate courses in the New York Polyclinic and the New York Postgraduate medical schools and hospitals.

For many years Dr. Ryland has been an active participant in the affairs of the medical organization and has upon many occasions proved his loyalty and value to the Association. He has served the Lafayette County Medical Society as secretary and as president and for thirty years has been Councilor of the 14th District of the Association. In his various capacities he has been ready at all times to respond to any demand made upon his time and ability and has won for himself the respect and admiration of physicians throughout the state.

Organization work has not precluded his interest in his private practice. His patients and colleagues are among his staunchest admirers. He has been a surgeon for the Missouri Pacific Lines since 1900.

Dr. Ryland has faithfully served his patients, his community and organized medicine and his election as President-Elect of the Association is predictive of excellent service and guidance.

MISSOURI BEST EQUIPPED FOR PREVENTION OF BLINDNESS

No concerted effort for the prevention of blindness in Missouri was organized until 1911 when the Missouri Association for the Blind came into existence. Before that time the only blind prevention work on cases from over the state was that performed at the Missouri School for the Blind. The ophthalmologist on the managing board of the school had the opportunity each year of improving the vision of several new pupils blinded from hereditary cataract or by trachoma; the eyes affected with hereditary cataract were improved by operation and those with trachoma by treatment and sometimes by operation. The great sympathy for and interest in the blind shown in St. Louis were probably due mostly to the location of the state school for the blind in that city.

The consideration of these state charges, so greatly handicapped from the very start in life, moved several influential lay persons and several eye physicians to activity around 1910. Perhaps the launching in 1908 of the National Committee for the Prevention of Blindness at New York City gave the local movement con-

siderable impetus. In any case, the prevention of blindness has always been the chief aim of the Missouri Association for the Blind. It was entirely due to the agitation by this organization that the percentage of blindness from venereal ophthalmia in new-born babies was considerably diminished in Missouri. Before that time, the number of pupils in attendance at the Missouri School for the Blind, visually handicapped because of ophthalmia neonatorum, was always between 20 and 25 per cent, it being the most frequent single cause of blindness at the school. It has been so much decreased that at the present time it is around 12 per cent and in the last two years there have been only two new pupils with this condition. Through the activity of the Missouri Association for the Blind and of the Missouri Commission for the Blind it was made compulsory by the State legislature in 1921 to use 1 per cent silver nitrate solution in all new-born babies' eyes.

Through the efforts of blind individuals themselves, led by popular referendum, an act of the General Assembly of Missouri in 1921 granted a pension of \$25 a month to all blind adults. Under the auspices of the Missouri Commission for the Blind statistics on between 5000 and 6000 blind persons over 21 years of age living in Missouri were collected from the pension application papers and published in 1922, 1925 and 1927. The statistics of 1922 represented only a part of the entire number, the count being completed in 1923. An entirely new recount of the same blinded individuals was made after the blind pension law was modified in 1923. In all three publications of statistics on the adult blind in Missouri, there were estimated by percentage the causes of blindness, the degree of vision, the age and sex of each pension applicant.

From the very first estimates on the causes of blindness in Missouri it was found that the greatest single cause of blindness was trachoma, accounting for at least 26 per cent of all the applicants for pensions. The State Board of Health immediately recognizing the urgency obtained a grant of money from the State legislature in 1923 and with the cooperation of the United States Public Health Service established the hospital for trachoma patients at Rolla and conducted many traveling clinics all over the state. The result of this work in combating trachoma has been of inestimable value to the state. The percentage of new blind pensioners incapacitated because of trachoma has been so decreased that only 13 per cent of the total number of new pensioners added to the role in 1932 were due to trachoma.

In 1925 statistics on blindness in children

were prepared from the ocular examinations of 523 pupils who had attended the Missouri School for the Blind since 1905. There was published in these statistics, in addition to the percentages for the different causes of blindness, vision, age and sex, the age at which the sight was lost and the age at which the child entered school for each cause of blindness. The number of new pupils for each of the twenty school years since 1905 was also tabulated for each cause of blindness. In addition the result of the Wassermann blood test since 1917, when it was first applied as a routine test, the number with other blind members in the family, the number with parents related were all tabulated for each cause of blindness. Lastly, the agents of trauma and those causing sympathetic ophthalmia in children were listed.

Since the prevention of blindness depends upon knowing the cause of blindness we can state without exaggeration that Missouri is better equipped to combat blindness in both adults and children than anywhere else in the world. Our duty is plain. We must not slacken an iota in the present campaign against ophthalmia neonatorum and trachoma. The work of the United States Public Health Service directed from Rolla must not be hampered nor diminished; it has fully proved its worth. In spite of all that has been accomplished trachoma is still the greatest single cause of blindness in Missouri.

In addition, we should direct attention to the two next most important preventable causes of blindness; namely, syphilitic optic atrophy in children and adults and hereditary blindness in children. Through every form of publicity we should push education against these scourges, but to date there has been no organized campaign for the prevention of syphilitic optic atrophy and hereditary blindness.

THE CATHOLIC HOSPITAL ASSOCIATION

The Catholic Hospital Association of the United States and Canada comprising eight hundred thirteen institutions held its eighteenth annual meeting in St. Louis, June 12 to 16. The sessions were held at St. Louis University and the Rev. Alphonse M. Schwitalla, S. J., president of the association, presided.

The session was opened with addresses by Archbishop John J. Glennon, honorary president and adviser; Bishop Thomas F. Lillis, Kansas City; the Rev. Father Schwitalla; Mayor Bernard F. Dickmann; Rev. Robert S. Johnston, S. J., president of St. Louis University, and Dr. F. J. V. Krebs, president of the St. Louis Medical Society.

Committees discussed medical, surgical, obstetrical, gynecological and pediatric nursing and departmental meetings were held in laboratory and roentgen ray service, dietetics, physical and occupational therapy, medical records, pharmacy, the medical staff and medical social service.

Father Schwitalla expressed sympathy with discussions of financial costs of sickness and hospitalization but warned against financial consideration becoming the criterion of medical service. He protested against the consideration of the indigent solely as wards of the state. The Rev. Paul L. Blakely, New York, associate editor of *America*, advocated a reversion to the old type of free charitable hospital.

Dr. John E. Ransom, Baltimore, director of the outpatient department of Johns Hopkins Hospital, stressed the importance of clinics in connection with hospitals and their operation with the same efficiency as any other part of the hospital.

Dr. William T. Coughlin, St. Louis, discussed the requirements of a surgical nurse.

A tablet commemorating the site of the old St. Louis Hospital, the first established west of the Mississippi, was dedicated by the delegates to the convention. The original hospital, a log cabin, was founded at 76 Spruce Street on November 6, 1828.

After many valuable scientific addresses and discussions the morning of the last day was devoted to papers on subjects related to the religious aspects of the Catholic hospital. In the afternoon business of the assembly was transacted and the new officers installed. Father Schwitalla was reelected president of the association, a position which he has filled since 1928. Headquarters of the organization will remain in the St. Louis University School of Medicine building.

NEWS NOTES

Drs. Lewellyn Sale and W. McKim Marriott and Rev. Alphonse M. Schwitalla, St. Louis, were elected vice presidents of the Health and Hospital Department of the Community Council of St. Louis at the annual meeting May 19.

The Tuberculosis Ball Game sponsored annually in St. Louis by the Tuberculosis and Health Society of St. Louis will be held July 13. Proceeds of the game will be used to feed undernourished children of St. Louis and St. Louis County. The Cardinals will play the New York Giants following a three-hour preliminary entertainment program.

Dr. H. S. Crossen, St. Louis, reviewed recent progress in cancer work in an address before the Illinois State Medical Society at the annual meeting held in Peoria, May 17.

Dr. J. Curtis Lyter, St. Louis, was the guest of the Macoupin County (Illinois) Medical Society in Carlinville, May 23, and delivered an address on "The Pathology, Diagnosis and Treatment of the Coronary Arteries."

Dr. John R. Caulk, St. Louis, was elected president of the American Association of Genito-Urinary Surgeons at the annual meeting of the association which was held in Washington, D. C., May 8 to 10.

Dr. Henry Gettys, St. Louis, began his duties as medical director of the St. Louis police department on June 15. Four departmental surgeons were named, Drs. Emmett H. Rund, Edward H. Bowdern, S. T. Vandover and Francis J. Medler.

Dr. E. Gorter, professor of pediatrics at the University of Leiden, Holland, was the guest of the St. Louis Medical Society and the St. Louis Pediatric Society at a joint meeting held at the St. Louis Medical Society building, May 23. Dr. Gorter delivered an address on "Copper and Anemia."

Dr. Max A. Goldstein, St. Louis, director of the Central Institute for the Deaf, was awarded the distinguished service medal of the American Laryngological, Rhinological and Otological Society for "outstanding work in the study and rehabilitation of the deaf child." The medal was presented June 9 during the annual meeting of the organization in Chicago.

Dr. Daniel L. Sexton, St. Louis, delivered an address at the seventeenth annual meeting of the Association for the Study of Internal Secretions which was held in Milwaukee June 12 and 13. His subject was "Treatment of Sexual Underdevelopment in the Human Male With the Anterior Pituitary-Like Hormone of Pregnant Urine."

Dr. R. C. Fagley, Fulton, was reelected president of the Missouri Society for Mental Hygiene at the annual meeting held in St. Louis, April 20. Other physicians elected to offices in the organization are: Dr. Paul Zentay, St. Louis, vice president; and Drs. M. A. Bliss, James Lewald and William Nelson, St. Louis, and Emmett Hoctor, Farmington, executive committee members.

SOCIETY PROCEEDINGS

COUNTY SOCIETY HONOR ROLL FOR 1933

(UNDER THIS HEAD WE LIST SOCIETIES WHICH
HAVE PAID DUES FOR ALL THEIR MEMBERS)

HONOR ROLL

Mercer County Medical Society, Decem-
ber 10, 1932.

Moniteau County Medical Society, Janu-
ary 13, 1933.

Ste. Genevieve County Medical Society,
January 19, 1933.

Camden County Medical Society, January
20, 1933.

Dent County Medical Society, February
1, 1933.

Chariton County Medical Society, Feb-
ruary 10, 1933.

MISSOURI STATE MEDICAL ASSOCIATION

Seventy-Sixth Annual Session, Kansas City

May 1, 2, 3, 4, 1933

MINUTES OF THE HOUSE OF DELEGATES

President Hotel, Monday, May 1, 1933

Morning Session

The first meeting of the House of Delegates of
the Seventy-Sixth Annual Meeting of the Missouri
State Medical Association, held in the Congress
Room of the President Hotel, Kansas City, con-
vened at 9:45 a. m., Monday, May 1, 1933, the Presi-
dent, Dr. Joseph W. Love, Springfield, presiding.

At roll call eighty-seven officers and delegates
responded as follows:

Officers

President.....Joseph W. Love, Springfield
President-Elect...W. L. Allee, Eldon
Vice Presidents...Elsworth S. Smith, St. Louis;
O. S. Gilliland, Kansas City
Secretary-Editor...E. J. Goodwin, St. Louis
Treasurer.....G. W. Hawkins, Salisbury

Councilors

2nd District.....W. T. Elam, St. Joseph
4th District.....J. B. Wright, Trenton
6th District.....J. S. Gashwiler, Novinger
7th District.....W. D. Pipkin, Monroe City
8th District.....B. K. Stumberg, St. Charles
9th District.....A. R. McComas, Sturgeon
10th District.....Don A. Barnhart, Huntsville
11th District.....J. H. Timberman, Chillicothe
12th District.....Spence Redman, Platte City
13th District.....A. J. Welch, Kansas City
14th District.....C. T. Ryland, Lexington
15th District.....L. J. Schofield, Warrensburg
16th District.....J. T. Hornback, Nevada
17th District.....Guy Titsworth, Sedalia
19th District.....J. S. Summers, Jefferson City
22nd District....U. P. Haw, Benton
23rd District.....J. B. Luten, Caruthersville

25th District.....P. S. Tate, Farmington
26th District.....W. H. Breuer, St. James
27th District.....J. C. B. Davis, Willow Springs
28th District.....W. M. West, Monett
29th District.....R. M. James, Joplin
30th District.....R. B. Denny, Creve Coeur

Delegates

COUNTY

DELEGATE

Adair.....J. S. Gashwiler, Novinger
Atchison.....C. E. Barnhart, Huntsville
Audrain.....J. F. Harrison, Mexico
Boone.....M. P. Neal, Columbia
Buchanan.....J. T. Stamey, St. Joseph
Buchanan.....F. H. Spencer, St. Joseph
Caldwell-
Livingston.....D. M. Dowell, Chillicothe
Carter-Shannon...T. W. Cotton, Van Buren
Cass.....L. V. Murray, Pleasant Hill
Christian.....R. R. Farthing, Ozark
Clay.....S. D. Henry, Excelsior Springs
Cole.....James Stewart, Jefferson City
Franklin.....F. G. Mays, Washington
Greene.....H. A. Lowe, Springfield
Greene.....Paul F. Cole, Springfield
Howard.....W. J. Shaw, Fayette
Howell-Oregon-
Texas.....A. H. Thornburgh, West Plains
Jackson.....Hugh L. Dwyer, Kansas City
Jackson.....E. Lee Miller, Kansas City
Jackson.....Tom Twyman, Kansas City
Jackson.....Francis E. Wilhelm, Kansas City
Jackson.....G. Wilse Robinson, Sr., Kansas
City
Jackson.....Jabez N. Jackson, Kansas City
Jackson.....B. Landis Elliott, Kansas City
Jackson.....Morris B. Simpson, Kansas City
Jackson.....Claude J. Hunt, Kansas City
Jasper.....L. B. Clinton, Carthage
Jasper.....L. C. Chenoweth, Joplin
Johnson.....R. F. McKinney, Warrensburg
Lafayette.....T. R. Butler, Lexington
Lawrence-Stone..H. L. Kerr, Crane
Lewis.....P. W. Jennings, Canton
Linn.....J. R. Dixon, Linneus
Macon.....W. A. Welch, Callao
Mississippi.....A. H. Marshall, Charleston
Moniteau.....J. B. Norman, Tipton
Nodaway.....C. D. Humberd, Barnard
Pettis.....F. B. Long, Sedalia
Pike.....T. H. Wilcoxen, Bowling Green
Platte.....H. M. Clark, Platte City
Randolph-Monroe.C. H. Dixon, Moberly
St. Charles.....A. P. E. Schulz, St. Charles
St. Francois-Iron-
Madison-Wash-
ington.....H. M. Roebber, Bonne Terre
St. Louis.....O. W. Koch, Clayton
St. Louis.....C. P. Dyer, Webster Groves
St. Louis.....F. J. Petersen, Richmond Heights
St. Louis City...Hillel Unterberg, St. Louis
St. Louis City...Walter Baumgarten, St. Louis
St. Louis City...John Morfit, St. Louis
St. Louis City...W. C. Gayler, St. Louis
St. Louis City...T. H. Hanser, St. Louis
St. Louis City...J. C. Peden, St. Louis
St. Louis City...F. J. V. Krebs, St. Louis
St. Louis City...E. C. Funsch, St. Louis
St. Louis City...H. S. Langsdorf, St. Louis
St. Louis City...Daniel L. Sexton, St. Louis
St. Louis City...Alphonse McMahon, St. Louis
Saline.....L. S. James, Blackburn
Vernon-Cedar....E. H. Liston, Nevada

On motion of Dr. Jabez N. Jackson, Kansas City, duly seconded, the reading of the minutes of the previous meeting was dispensed with and adopted as printed in *THE JOURNAL*.

PRESIDENT'S MESSAGE AND RECOMMENDATIONS

The President has to report that he has visited a number of societies in the State by invitation and has observed a very good spirit manifested on the part of the profession. There was very little complaint registered by the societies and no particular complaint about difficulty in getting funds to pay their dues. The budget for the last year was lower than it was the year before and a number of economies were in order that have been practiced throughout the year, and some economic measures have been adopted voluntarily on the part of the officers and Executive Committee of the Association. It seems feasible still to reduce the expenses of the Association without compromising the usefulness and efficiency of the Association. It is hoped to do that without the necessity of reducing the dues.

Upon the request of the Secretary, an Assistant Secretary was employed by the Executive Committee beginning February 1, 1933. He is now functioning, but there has been no extra expense added on that account, and some very material reductions in expense have resulted from other measures taken in the office of the Secretary.

Perhaps some appropriate resolution would be desired by the American Medical Association from this State Association on the Report of the Committee on the Costs of Medical Care. It seems that the sentiments expressed in the minority report are more universally acceptable to the profession practicing medicine on the competitive system than on the majority report, and I would suggest that an appropriate resolution from this Association, approving the minority report with such amplification as may seem wise and appropriate be adopted.

The principal advantage in our Association, of course, is the progress of scientific work—our scientific programs; but it takes certain machinery to organize and carry it on, to see that opportunity is afforded for these splendid programs which we have, both in the State Association and in the county societies. The Committee on Postgraduate Course has continued with its efforts and many successful scientific meetings have been held in the county societies, and the spirit has kept up regardless of the depressed conditions in the communities.

Owing to the fact that the Council voted for reasons of economy to pass the annual meeting of the Council last fall, a vote was taken by mail, and after certain correspondence the Executive Committee met and acted in lieu of Council and arranged for the Annual Meeting, for the budget and for other things which are required by our By-Laws, all of which will be duly reported by the Chairman of the Council and the Executive Committee.

Unfortunately, due to the fact that the Council did not meet, there was a conflict in dates in the meeting of the Medical Association, which carries with it the date of the Woman's Auxiliary, and another meeting. It so happened that the president of the Woman's Auxiliary, Mrs. David S. Long, Harrisonville, was also president of the Federation of Women's Clubs of the state and she took the pains to communicate with the liaison officers to find out the date of the State Association meeting, so the date of the other meeting could be decided and there would be no conflict. But unfortunately, due to no fault of the women or the Council, that particular matter was overlooked until it was too late to change the date of the meeting. A number of expedients were suggested. One was to change the date of the Woman's Auxiliary and put it a week ahead but that seemed unsatisfactory. It was suggested to change the date of our meeting, but that seemed undesirable. In order to permit Mrs. Long not to disappoint the members of the Auxiliary, it was suggested that she arrange the program so that she could hold the meeting of the Federation in St. Louis during the same period, she to come to Kansas City on Wednesday of the week of our meeting and return to her duties in St. Louis by airplane. There will be some extra expense attached to this, and I feel that the Association will be glad to share that expense so as to relieve the Woman's Auxiliary in the embarrassing dilemma in which they find themselves, and for which they are not to blame. I recommend to the Council that they approve the necessary expense for the president of the Woman's Auxiliary to visit the meeting at Kansas City by plane.

Probably all of us have been saturated for the last few weeks and months with the discussions regarding the costs of medical care, and there is no need of going further with that here.

Without further ado we will proceed to the regular order of business which is the announcement of reference committees:

Reference Committee on Amendments to Constitution and By-Laws

W. H. Breuer, St. James, Chairman.
C. P. Dyer, Webster Groves.
F. G. Mays, Washington.

Reference Committee on Resolutions

Jabez N. Jackson, Kansas City, Chairman.
Walter Baumgarten, St. Louis.
H. L. Kerr, Crane.

Reference Committee on Miscellaneous Affairs

G. Wilse Robinson, Sr., Kansas City, Chairman.
R. M. James, Joplin.
U. P. Haw, Benton.

REPORT OF THE GENERAL COMMITTEE ON ARRANGEMENTS

Dr. A. J. WELCH, Kansas City, Chairman of the Committee reported as follows: There is scarcely anything to report except a few banquets that I want to announce. The first will be tonight in the Aztec Room of this hotel, a dinner conference on Tuberculosis Control. Tickets are \$1.25 a plate. I hope you will attend that.

Tuesday, from 6 to 8 o'clock, also in the Aztec Room, there will be a testimonial dinner to Dr. Arthur R. McComas, Surgeon, Chairman of Council, under the auspices of a group of his friends and colleagues. You are all welcome to attend that. Tickets can be secured at the registration desk. I hope we will have a good turnout and give Dr. McComas a royal good time for once in his life.

Wednesday, at 8 p. m., in the Aztec Room, the Jackson County Medical Society will be host to the visiting members. There will be stimulating refreshments and vaudeville. I know you will attend that.

The various alumni societies have arranged their own dinners.

When we invited you here we promised you almost everything under the sun. We have some very good golfers here and we have arranged for you to be permitted to play on any of the courses in town. Besides the hospitality of the Jackson County Medical Society and the good citizens of Kansas City, we did not promise, but we are going to give you something else, and that is beer.

On motion of Dr. S. D. Henry, Excelsior Springs, duly seconded, this report was accepted.

The Secretary, Dr. E. J. Goodwin, St. Louis, read his report as follows:

REPORT OF THE SECRETARY

Your Secretary does not believe it necessary to elaborate upon the general economic situation as a factor in reducing the incomes of our members from professional service. Naturally this affected the income of our Association because many members found themselves so strained financially that payment of the annual dues was postponed. A year ago the Council instructed your Secretary to be lenient with delinquent members and not drop them. Following this policy I have carried on the rolls as in good standing a number of members who have promised payment and asked for this lenient attitude by the Association. Upon recommendation of a society we have even charged off the delinquent dues of members who have long served us on payment of the current year's dues. Your Secretary believes that in these troublous times the Association has an opportunity never before offered of proving to unfortunate members that their misfortune will not bar them from membership.

Your Secretary believes it to be far more advantageous to the organization to charge off a year's or two years' dues for members so unfortunate through no fault of their own than it would be to reduce the dues of the entire membership. A reduction of dues by even \$1.00 would disorganize our activities. Postgraduate service would be extremely curtailed. The defense fund would have to be reduced and the *JOURNAL* would suffer by curtailment in the number of papers published, county society proceedings and other matters that all members feel are interesting and are important.

If you cut the dues down by \$2.00 then you will put us back into the days when our *JOURNAL* was a poor imitation of a scientific magazine and no postgraduate service was rendered and the amount of the appropriation to those who are sued for malpractice would be cut to a very low minimum. It would also mean that instead of being able to carry those delinquent members stricken by the hard times we would simply have to drop them because the mailing list of the *JOURNAL* would have to be reduced owing to the expense of printing and mailing.

My belief is that instead of reducing the dues much liberality should be shown those unhappy ones who are much more humiliated by their inability to pay than the Association is embarrassed by charging off their dues. One more word on this subject. I have corresponded with a number of state associations of numerical strength similar to ours and asked if their dues were lowered would it embarrass their activities. Without exception they replied and I have the figures here before me that a reduction would disorganize their activities.

I have pared to the bone all expenses in conducting the affairs of the organization. I took a voluntary cut in my own

salary beginning last October of 20 per cent and reduced my office force by \$1,280 letting one clerk out entirely and cutting the salary of the others. I have reduced the number of pages in each issue of the JOURNAL and with the cooperation of our printer, Mr. Ovid Bell, we reduced the printing cost by \$100 a month, he lowering his profit in order to accomplish this end. I think I see a streak of light in the darkness for some advertisers who canceled their orders are coming back, and I hope toward the end of the year others will be with us again.

The Association continues to be an influential factor with the public and membership is recognized by laymen as an endorsement of reputability and competence. Some newspapers continue to ask about advertisements offered to them about which they are in doubt and they follow our advice. Advertisements in these newspapers representing thousands of dollars are declined because we do not recommend them.

The St. Francois-Iron-Madison County Society has requested that Washington County be attached as an additional component. This will be acted upon by the Council. Dr. Guy Titsworth, Councilor of the 17th District, in cooperation with our Assistant Secretary, Mr. Bartelsmeyer, organized the Benton-Dallas-Hickory-Polk County Medical Society with twenty members. No society has actually disbanded during the year but some of them have been less active than in former years. One of the principal activities of our Assistant Secretary will be to visit each county society in the state and render the encouragement of the organization to the activities of all county societies. Furthermore, he performs many duties in the office thus enabling us to conduct our affairs without increasing our expenses one dime.

This being a legislative year clerical work has been considerably increased. We came through the legislative session with considerable success. The Committee on Public Policy will give you a detailed report on this phase of our activities.

I wish again to pay tribute to the loyalty and devotion of our county society secretaries to our Association. Without the aid of these faithful members our Association would suffer much loss in its influence and usefulness to the membership.

The records of the Secretary's office and of the Treasurer's office have been examined by Kessler Cartall & Co., certified public accountants, and their report is here to be examined.

The terms of the councilors of the even numbered districts expire this year. The terms of two delegates to the American Medical Association also expire this year.

As usual our office assists all committees in performance of their duties and in the compilation of their reports.

On motion of Dr. W. T. Elam, St. Joseph, seconded by Dr. S. D. Henry, Excelsior Springs, the Secretary's report was referred to the Council.

The Treasurer, Dr. G. W. Hawkins, Salisbury, read his report as follows:

REPORT OF THE TREASURER

I have the honor of submitting the following report of the financial condition of the treasury of the Missouri State Medical Association at the close of business, April 28, 1933.

General Fund

Receipts

Balance May 20, 1932.....	\$10,388.89
Membership dues	14,049.50
Advertising	6,188.30
Medical Protective Company (Rent).....	495.00
Exhibit space	235.00
St. Louis Medical Society Transfer.....	7.50
Interest Jan. 1, 1932 to Dec. 31, 1932.....	120.00

Total\$31,484.19

Disbursements

Vouchers paid	\$24,053.03
Balance, April 28, 1933.....	\$ 7,431.16

Legislative Fund

Receipts

Balance, May 20, 1932.....	\$ 1,368.65
Transferred from General Fund.....	1,809.00
Interest Jan. 1, 1932 to Dec. 31, 1932.....	20.00

Total\$ 3,197.65

Disbursements

Vouchers paid	\$ 626.13
Balance, April 28, 1933.....	\$ 2,571.52

Defense Fund

Receipts

Balance, May 20, 1932.....	\$ 1,261.77
Interest, Jan. 1, 1932 to Dec. 31, 1932.....	14.00

Total\$ 1,275.77

Disbursements

Vouchers paid	\$ 1,043.41
Balance, April 28, 1933.....	\$ 232.36

Sinking Fund

Receipts

Balance, May 20, 1932.....	\$ 755.02
Interest Jan. 1, 1932 to Dec. 31, 1932.....	14.00

Balance, April 28, 1933.....\$ 769.02

Recapitulation

April 28, 1933

General Fund	\$ 7,431.16
Legislative Fund	2,571.52
Defense Fund	232.36
Sinking Fund	769.02

Total\$11,004.06

G. W. HAWKINS, Treasurer

On motion of Dr. W. T. Elam, St. Joseph, duly seconded, the report was referred to the Council.

Dr. E. J. Goodwin, St. Louis, Chairman of the Committee on Scientific Work, read the report as follows:

REPORT OF THE COMMITTEE ON SCIENTIFIC WORK

The report of the Committee on Scientific Work is embodied in the program before you. The Committee is pleased to report what we believe an added interest of a highly satisfactory nature in the cooperation of the Kansas City Society of Ophthalmology and Otolaryngology with the Ophthalmic Section of the St. Louis Medical Society. These members requested that the afternoon of Thursday, the last day of the Session, be assigned to them for a program of their own selection on scientific topics concerned with their specialties. We hope this may be made an annual feature.

The members who are specially interested in tuberculosis requested that a session on Thursday be assigned to them for presentation of their problems. This also the Committee has granted and we believe the papers will be extremely interesting, not only to the specialists themselves but to other members who may remain over to attend both this session and the session on Diseases of the Eye, Ear, Nose and Throat.

For guests your Committee has invited and they have accepted the invitation, Dr. Charles A. Elliott, Dr. Peter C. Kronfeld and Dr. J. Gordon Wilson, of Chicago, and Dr. Arnold S. Jackson, Madison, Wisconsin.

The program is somewhat crowded but strict attention to time limits will permit the reading of all papers with reasonable amount of time for discussion.

E. J. GOODWIN, Chairman
ROBERT F. HYLAND
J. E. STOWERS

On motion of Dr. C. H. Dixon, Moberly, seconded by Dr. W. H. Breuer, St. James, this report was adopted.

Dr. J. F. Harrison, Mexico, Chairman of the Committee on Public Policy, read the following report:

REPORT OF COMMITTEE ON PUBLIC POLICY

Your Committee on Public Policy submits the following report of their activities during the 57th session of the General Assembly, the legislature being in continuous session from January 4 to April 25 covering a period of 112 days.

In accordance with the instructions of the House of Delegates at the 1932 Session at Jefferson City, directing the Committee on Public Policy to have prepared and introduced a bill giving physicians and hospitals a lien on moneys accruing as a result of Highway accidents, etc., the bill was drafted by the Honorable Don Carter, Surgeon, and was introduced in the House by the Honorable A. L. McCauley, Joplin, and was known as H. B. No. 282. After being heard in the judiciary committee it was reported out with recommendations to pass. The bill failed of passage by a vote of 54 to 46. However, upon reconsideration of the vote the bill passed the House upon a final vote of 89 to 24. It was then sent to the Senate and was referred to the public health committee where, at the hearing strenuous objections were made by the representatives of the Missouri Insurance Council, also by a group of lawyers who in a general way are known and referred to as "plaintiff's attorneys" in damage suits. While the bill was pending in the Senate committee the chairman received numerous petitions and telegrams against a favorable action upon the bill. Notwithstanding the friendship of the committee chairman,

Senator Brogan, we were unable to obtain a favorable report from the committee, therefore the bill was not presented on the floor of the Senate.

Early in the session a number of bills sponsored by the Governor were introduced to abolish and consolidate different boards. One of these proposed to abolish the State Board of Health and create the office of State Health Commissioner vested with all the powers and duties formerly exercised by the Board of Health. At this time, on account of the protest of various cults and organizations who objected to being controlled by a regular practitioner as Health Commissioner, it was proposed that the Health Commissioner should be a layman and direct all of the activities of the various departments. After hearings before the Senate committee and two conferences with Governor Park the Senate committee recommended a substitute bill which passed. This bill abolished the office of secretary of State Board of Health and created the office of State Health Commissioner to be appointed by the Governor. The State Board of Health remains the same with all of the duties they have had in the past.

There was also introduced by O'Bryan, of Randolph County, H. B. No. 26 which provided that a physician's license could not be revoked by the Board of Health for criminal abortion unless he had first been convicted of manslaughter. This bill was heard at length in the House committee and after quite a delay was reported out. The bill was later defeated in the House. There were also two sterilization bills introduced, both of which failed of passage. Three or four bills were introduced abolishing the county health officer and county health nurse. All these failed to pass with the exception of one bill which provided for a county health officer for a term of one year in counties of 20,000 and less, the health officer to be appointed and his compensation fixed by the county court.

On March 31 President Roosevelt signed the act passed by congress permitting physicians to prescribe alcoholic liquors in such amount and at such times as they deemed necessary. The General Assembly had adopted a resolution that no bills other than appropriation and administration measures were to be considered after March 31, however, there was introduced on April 11, H. B. No. 664 which repeals six sections of the State Prohibition Act and allows reputable physicians to prescribe alcoholic liquor in accordance with the new Federal Law. The effect of this bill will be to remove all state regulations and restrictions on physicians in prescribing liquor and be entirely under Federal control in such regulations as the Attorney-General of the United States shall make. This bill goes into effect July 24, 1933, ninety days after adjournment of the legislature. The enactment of this piece of legislation was rather unusual in that it was introduced and passed both House and Senate and received the Governor's signature within a period of ten days.

During the closing hour the Governor appointed four members of the State Board of Health for a period of four years, all members of the State Medical Association.

This briefly summarizes the legislation enacted and measures defeated that affected our profession and the public health.

In closing this report your committee acknowledges the active assistance of President Jos. W. Love, President-Elect W. Logan Allee and A. R. McComas, Chairman of the Council. During the long legislative session we often called on individual members as well as the officers of the component societies of the State Association. The response was always prompt and cheerful for which we here express our appreciation.

Respectfully yours,
J. F. HARRISON, Chairman
W. T. ELAM
P. D. GUM

On motion of Dr. A. J. Welch, Kansas City, duly seconded, this report was referred to the Council.

Dr. J. C. B. Davis, Willow Springs, Chairman of the Committee on Publication, read his report as follows:

REPORT OF THE COMMITTEE ON PUBLICATION

The 29th volume of the JOURNAL was completed with the December, 1932, issue. During the twelve months of 1932 the JOURNAL published 92 original articles and 1 special article. There were printed 48 editorials, 42 obituaries, 335 news items, 108 reports of county societies, the report of our Seventy-Fifth Annual Meeting and 3 miscellaneous articles. Forty-six reports of the Woman's Auxiliary, numerous articles on Truth About Medicine and 91 book reviews were published. There were 76 books received during the year. These books were sent to the medical libraries of St. Louis Medical Society, Jackson County Medical Society, Nodaway County Medical Society and some highly technical books were sent to the medical library of the State University.

The JOURNAL contained 568 pages of reading matter and 384 pages of advertising, the latter earning \$7,087.45. To this amount must be added \$883.28 for accounts receivable mak-

ing a total of \$7,970.73. Subscriptions to the JOURNAL amounted to \$82.90 making a grand total of \$8,053.63 actually earned by the JOURNAL. The total cost of printing the JOURNAL, including the cost of illustrations, was \$6,879.67 showing an excess of income over expenditure to the amount of \$1,173.96.

Attached to this report is a description of the contents of the JOURNAL month by month including the monthly earnings and expenses.

J. C. B. DAVIS, Chairman
G. WILSE ROBINSON
M. A. BLISS

On motion of Dr. W. T. Elam, St. Joseph, duly seconded, the report was referred to the Council.

Dr. O. B. Zeinert, St. Louis, read the report of the Committee on Defense, as follows:

REPORT OF COMMITTEE ON DEFENSE

Disposition of Cases

Cases pending May 1, 1932.....	22
Threats pending May 1, 1932.....	11
New cases during the year.....	9
New threats during the year.....	1
Cases settled during the year.....	20
Threats which have not developed into suits during the year.....	7
Cases pending May 1, 1933.....	11
Threats pending May 1, 1933.....	5
Financial assistance rendered during the year.....	\$1,043.35

Of the cases settled there were three verdicts for the defendant, seven cases were dismissed or thrown out of court, six verdicts were for the plaintiff, four cases were settled out of court and seven threats were dropped.

Four of the physicians against whom verdicts were rendered were defended by insurance companies. In the fifth suit the claim was for \$3,000 and the plaintiff was awarded \$186. Other expense to the Association was for attorney fees and court costs accrued by the physician prior to the case being thrown out of court.

C. E. HYNDMAN, Chairman
M. L. KLINEFELTER
O. B. ZEINERT

On motion of Dr. W. T. Elam, St. Joseph, duly seconded, this report was referred to the Council.

Dr. Ellis Fischel, St. Louis, Chairman of the Committee on Cancer, presented the following report:

REPORT OF COMMITTEE ON CANCER

The Cancer Committee has continued its investigation of the facilities for handling cancer patients throughout the State of Missouri.

In the larger cities the facilities are adequate for taking care of the cancer patient therein resident in a satisfactory manner as governed by standards enumerated by the American College of Surgeons; however, in the State at large facilities are woefully inadequate.

By a recheck of the information obtained last year, which according to our last annual report showed sixteen counties with good facilities, we find the number must be reduced to ten and in only two cities, namely, Kansas City and St. Louis, is provision made for the handling of the cancer sufferer who has no available funds.

During the year requests have come from physicians, members of the State Medical Association, inquiring of the Cancer Committee where treatment might be obtained free of charge. Unfortunately, your Committee could not give the desired information. Except for Barnard Free Skin and Cancer Hospital in St. Louis, where the number of beds is limited, the indigent cancer sufferer at large in the State of Missouri cannot receive treatment. There is one exception to this statement: State Hospital No. 1, at Fulton, has an adequate supply of radium, and roentgen ray equipment suitable for superficial cancer therapy, and a well equipped operating room. This equipment was obtained a number of years ago in order that inmates of the four state hospitals and the penitentiary suffering from cancer might receive adequate treatment. Your Committee is in receipt of a letter from Dr. T. R. Frazer, Acting-Superintendent, under date of April 12, 1933, which states that during the year 1932 six patients from the four State institutions were treated for cancer. He also states that no member of the staff has had special training in the use of radium. It appears that a citizen of the State of Missouri, who has no funds and is unfortunate enough to be afflicted with cancer, must be either insane or a criminal in order to obtain treatment; furthermore, the treatment that he receives will not be administered by a physician who has adequate training in the treatment of cancer. This is certainly a deplorable situation and should be remedied.

Your Committee feels the remedy is readily at hand without any noticeable increase in cost to the State. We believe that the State Medical Association might justly demand of the

Board of Managers of the Eleemosynary Institutions that fifty beds in State Hospital No. 1 be set aside for the treatment of cancer patients even though sane and not criminal; treatment of patients to be administered according to a plan worked out through the cooperation of your Cancer Committee with the medical staff of State Hospital No. 1.

The Cancer Committee feels that further education of both lay and professional groups in regard to cancer is desirable. It is recommended that an extensive program of educational work be undertaken during the coming year. This program can be carried out without inflicting too great a burden on any one group. Teams composed of three or four members can be organized in Jackson County, Boone County and St. Louis. The members of these teams must be qualified to speak before lay and professional audiences and to give dry clinics on cancer. The Councilor meetings and the joint meetings of county medical societies might be encouraged to put on one day programs devoted entirely to a consideration of the cancer problem. With proper advertising to the laity and to the profession these one day meetings could be made not only interesting but of practical value. This educational work on cancer should be carried out in conjunction with the Committee on Postgraduate Course and the State Committee of the American Society for the Control of Cancer. The expense to the State Association will be minimal since the State Committee of the American Society for the Control of Cancer has some funds which will help defray the traveling expenses of the teams and a donation from a private individual interested in the cancer program has been received specifically for this plan.

The Cancer Committee is in full concurrence with the American College of Surgeons in its recommendation that tumor clinics be established in the larger general hospitals throughout the State.

In 1931, upon suitable resolutions of the St. Louis Medical Society and upon receipt of an invitation from the Health Commissioner of the City of St. Louis, the American Society for the Control of Cancer made a cancer survey of the City of St. Louis. This has proven of great value. The Cancer Committee of the State Association therefore recommends that the following resolution be adopted by the State Association:

WHEREAS, The rapid increase of cancer in its various forms is assuming alarming proportions, now being second only to heart disease as a cause of death; and

WHEREAS, The present cancer situation is a challenge to the medical profession to render an increasingly effective service in its diagnosis and treatment; and

WHEREAS, The greatest hope for reducing the increasing mortality from this disease lies in diagnosis and treatment in early stages; and

WHEREAS, The medical profession and the hospitals are the only forces capable of coping with the cancer problem at this time; and

WHEREAS, There is need for further education of the medical profession and the public as to the need for and value of early diagnosis and early adequate treatment; and

WHEREAS, A constructive program of improved cancer service can be based only on accurate information as to the present professional and institutional facilities for the diagnosis and treatment of this disease; therefore, be it

Resolved, That the Missouri State Medical Association approve and sponsor a survey of the cancer situation in Missouri, and that the American Society for the Control of Cancer be requested to make such a survey, reporting its findings with recommendations to this Association.

To sum up this lengthy report the Cancer Committee of the Missouri State Medical Association makes the following specific recommendations:

I. That fifty beds in the State Hospital No. 1 be made available for the treatment of cancer patients.

II. That "flying teams" be organized to hold one-day cancer meetings under the auspices of various councilor meetings and joint society meetings during the coming year.

III. That the American Society for the Control of Cancer be requested to make a survey of the cancer situation in the State of Missouri, the survey to be made without cost to the Missouri State Medical Association.

Respectfully submitted,

EARL C. PADGETT
DUDLEY A. ROBNETT
ELLIS FISCHER, Chairman

On motion of Dr. W. H. Breuer, St. James, seconded by Dr. L. C. Chenoweth, Joplin, the report was referred to the Reference Committee on Miscellaneous Affairs.

Dr. C. H. Neilson, St. Louis, Chairman of the Committee on Postgraduate Course read his report as follows:

REPORT OF COMMITTEE ON POST-GRADUATE COURSE

Dr. C. H. NEILSON, St. Louis: In presenting Postgraduate Courses during the year from May 1, 1932, to May 1, 1933, 91 members were sent as speakers to 56 meetings in 33 so-

cieties and Councilor districts. During the preceding year 86 members were sent to 59 meetings in 23 societies and Councilor districts. Speakers were sent from St. Louis, Kansas City, Columbia and Springfield. The total expenditure was approximately \$800.00. This includes only the travelling expenses of the men going to some distant place to hold a clinic and make an address. None of these men have had any compensation except for their expenses, and many men have gone to various places and have not turned in any expense bills at all.

A live doctor usually is trying to improve himself. He attends his county society and the State Association. I would like to make a rather impassioned plea this morning for more postgraduate work than is being done, but I think it would be wasted effort because the men I would like to reach are not here this morning. The men who do not need it very much are here. We all should make effort individually to keep up with the times, and a man can only do that by reading the books and journals, attending clinics, and coming in contact with his fellow colleagues. I never could quite understand why men do not go to their medical societies. I am speaking now of my own medical society. We have an association of 1,100 or 1,200 members; but the average attendance of the St. Louis Medical Society is probably 175. I have heard men say they do not attend because they do not get anything. That is absurd. I do not care what the program is, the ordinary doctor including the specialists and internists, can learn something. I presume a certain amount of it is due to age, we lose our ambition as we grow older. But the young men do not come. In the City of St. Louis, of course, and in organized medicine generally, we have this disadvantage; in every hospital in the City of St. Louis we have hospital conferences every week. For instance, in St. John's Hospital we have a hospital conference every week for one hour or longer, where we have a set program and all the members of the staff are supposed to be there. That takes the place, in a measure, of the St. Louis Medical Society. And so it is in every hospital, the men go there instead of to their organized societies. That is an effort which is quite important against organized medicine, that I say ought not to be. I presume in the smaller districts and counties you do not have that difficulty and therefore there is no excuse for a man not attending his society. There should be more postgraduate work than is being done. It is amazing to me that the counties and the outlying districts do not apply to us for more help. I have never yet had anyone turn me down, and the men in the cities, in the institutions and schools, are glad to go out and put on these postgraduate programs.

I feel sure it ought to be increased. I feel equally sure that our dues ought not to be decreased for this very reason. There ought to be a movement in the State whereby more postgraduate work is done. How to get it done, is the question.

Dr. W. T. Elam, St. Joseph, moved that this report be referred to the Committee on Miscellaneous Affairs. Motion seconded and carried.

Dr. H. A. Lowe, Springfield: I feel that the Committee on Miscellaneous Affairs should take note of one thing that Dr. Neilson mentioned in this report. I am referring to the infringement of hospital staff meetings upon county and city medical societies, and I think that some sort of regulation should be adopted and some rules followed in these meetings. I am sure it is not the policy of the Committee on Hospital Standardization to have discussed in staff meetings nothing but subjects discussed in county societies. Therefore I feel that this body should inaugurate some sort of rules and regulations that hospital staffs and societies might follow. It is really quite a difficult situation in some places. In our city we have three hospital staff meetings a month and two medical societies, and frequently the programs very much overlap.

Dr. Robert Vinyard, Springfield, Chairman of the Committee on Medical Economics, read the report of that committee as follows:

REPORT OF THE COMMITTEE ON MEDICAL ECONOMICS

The most outstanding medical economic problem of the last year is furnished by the report of the Committee on the Cost of Medical Care.

The report will not be reviewed in detail here as it has been published in the *Journal of the American Medical Association* and in our state JOURNAL, and has been widely commented on in both medical and lay press.

The report furnished much valuable information and is most worth while in that respect. It really is a heritage of the days of super-organization which preceded our present economic depression. The majority report in effect proposes con-

tract practice, centered about hospitals. It contains certain elements of socialized or state medicine.

The minority report points out the evils and abuses which might be expected to follow the adoption of the system proposed in the majority report. It emphasizes the importance of the individual relation between the physician and patient. The minority report best serves as a warning that whatever system is followed, it is most important that the direction of the care of the sick be in medical, rather than lay hands.

The wide publicity given the report in the lay press has very often created the erroneous impression that the increased cost of medical care is due to increase in medical fees, or that medical fees are too high, when, as a matter of fact, the increased cost has been due to expensive hospital construction and equipment, the frequent use of roentgen ray and laboratory facilities, and cost of special nursing, patent medicines and the employment of irregular practitioners.

Therefore this committee recommends:

1. That this society will endorse the minority report of the committee on the cost of medical care.

2. That publicity be used to point out the real causes of increased medical care to correct the above mentioned erroneous impression.

3. That a copy of this report or suitable resolutions covering its recommendations be sent to the American Medical Association.

ROBERT VINYARD, Chairman
R. B. H. GRADWOHL
K. W. KINARD

On motion of Dr. S. D. Henry, Excelsior Springs, duly seconded, this report was referred to the Committee on Resolutions.

REPORT OF COMMITTEE ON CONSTITUTION AND BY-LAWS

Dr. M. P. Overholser, Harrisonville, Chairman, reported that no recommendations had been made for any changes in the Constitution and By-Laws.

On motion of Dr. W. T. Elam, St. Joseph, duly seconded, this report was adopted.

REPORT OF COMMITTEE ON McALESTER MEMORIAL

Dr. A. R. McCOMAS, Sturgeon, Chairman, reported as follows: The McAlester Memorial Foundation has very, very little money in the treasury and therefore have not been able as yet to act upon their own initiative beyond the writing of letters. As you know, two years ago it was tentatively agreed that speakers sent out by the Postgraduate Committee to address societies could also address lay societies and organizations. This has been done in a few instances and has met with very hearty approval; but unfortunately, the county societies have overlooked the McAlester Memorial and have neglected in many instances to avail themselves of this opportunity to address lay audiences.

The purpose of this report is principally to call your attention to that fact, since the McAlester Memorial itself has no funds with which to pay the traveling expenses of members of this Association. I hope you will bear this in mind and that when you arrange for postgraduate meetings in your county societies you will also arrange a meeting at your public school or some other auditorium where the general public can be reached.

On motion of Dr. W. T. Elam, St. Joseph, duly seconded, this report was adopted.

Dr. S. D. Henry, Excelsior Springs, offered a resolution as follows:

Resolution Adopted by the Clay County Medical Society

WHEREAS, The rural practitioners of Missouri have for over three years been battling in the very teeth of the most distressing conditions known to history. These men have rendered capacity service for minimum fees or none at all. . . . They have borne the burden under increasing expense and decreased income. Their "family budget" swings farther and farther out of balance; and,

WHEREAS, These men are paying war prices for pharmaceuticals, books, journals and appliances—even to the point of buying on credit—and failing to make collections with which to meet payments; they are being harried and hounded by bill-collectors to a condition of distress; and,

WHEREAS, Strong men are breaking down with heart and nervous diseases everywhere, under the almost unbearable depression, with no relief in sight in the near future; therefore be it

Resolved, That the Clay County Medical Society hereby makes earnest protest against the annual assessment of \$8.00 per member which rate was levied in prosperous times. Our membership is being decimated—some members being three years delinquent, and the number growing. We are being

weakened to a menacing degree; our influence for good is being paralyzed, and our purposeful progress impeded—our society interest waning. We believe that maintenance of war time exactions on rural practitioners of medicine is equivalent to suicide for medical organization based on county units.

By the society,

R. E. SEVIER, President
J. J. GAINES, Secretary

It was moved by Dr. C. H. Dixon, Moberly, that the resolution be referred to the Committee on Amendments to the Constitution and By-Laws. Seconded and carried.

Dr. S. D. Henry, Excelsior Springs, offered the following resolution which without objection was referred to the Committee on Resolutions:

Resolution on Use of Veterans' Hospitals

WHEREAS, There is at present a large number of Citizens of the United States that are indigent and unable to pay for hospitalization or obtain medical or surgical treatment when sick or disabled and in need of same, and

WHEREAS, The hospitals of the United States known as Veterans Hospitals have at this time much less than their capacity of occupancy, therefore be it

Resolved, by the Missouri State Medical Association in its seventy-sixth annual meeting here assembled that we request and demand that the indigent citizens of the United States be allotted and given the right to 25 per cent of the capacity of above mentioned hospitals to be available upon the certification by any member of this society in good standing, that any citizen of the United States is in need of medical or surgical treatment and that this person is indigent and without means to pay for treatment. Be it further

Resolved, That a printed copy of this resolution be sent to the President of the United States and each member of the United States Congress and the members of Congress from our own state be asked to give their best efforts to enact this resolution into law to the end that our indigent citizens be afforded proper medical and surgical attention.

Dr. H. L. Dwyer, Kansas City, for the Jackson County Medical Society, offered a resolution which, as it involved a change in the Constitution and By-Laws, was referred to the Committee on Amendments to the Constitution and By-Laws. The resolution follows:

Resolution on Adjustment of Dues

WHEREAS, The widespread economic depression has made it impossible for many of our membership to pay their annual dues, and

WHEREAS, We believe our budget should be adjusted to conform with the lowered income, therefore be it

Resolved, That the annual dues be changed from \$8.00 to \$5.00.

Dr. D. L. Sexton, St. Louis, offered a resolution which on motion was referred to the Committee on Resolutions. The resolution follows:

Resolution on Status of Members Moving to Other Counties or States

At the request of the membership committee of the St. Louis Medical Society the following resolution is presented by the St. Louis Medical Society delegation:

WHEREAS, Many members of County Medical Societies move their residences from one county to another, or even to other states while delinquent in dues and indebted to the County Medical Society of which they are members originally and join other County Medical Societies leaving their debts to the first Society unpaid, therefore be it

Resolved, That the delegates of the Missouri State Medical Association to the American Medical Association present proper resolutions suggesting a remedy for this practice.

Appointment of Committee on Nominations

The President appointed the following Committee on Nominations:

W. T. Elam, St. Joseph, Chairman.

A. P. Erich Schulz, St. Charles.

J. C. B. Davis, Willow Springs.

Spence Redman, Platte City.

L. C. Chenoweth, Joplin.

O. W. Koch, Koch.

L. J. Schofield, Warrensburg.

D. A. Barnhart, Huntsville.

E. Lee Miller, Kansas City.

Paul F. Cole, Springfield.

On motion the House of Delegates adjourned until 3 o'clock.

Monday, May 1, 1933—Afternoon Session

The adjourned meeting of the House of Delegates convened at 3:20 p. m., Monday, May 1, with the President, Dr. Joseph W. Love, in the Chair.

REPORT OF THE COUNCIL

The Executive Committee held one meeting at Jefferson City February 13 which was attended by the Committee on Public Policy in order that certain measures pending before the legislature might have the attention of both committees.

The Chairman explained to the Executive Committee that a vote had been taken among the Council in October, 1932, relative to the Annual Meeting of the Council which is scheduled for November of each year and in taking this vote each member of the Council was asked if he had any important matters to bring before the Council that were so pressing that they could not be held over until the Annual Meeting. The vote was 29 "yes" and 3 "no." The Annual Meeting was therefore postponed creating a saving of \$500 or \$600.

The Executive Committee appointed the following General Committee on Arrangements for the Kansas City Session, namely: Dr. A. J. Welch, Kansas City, Chairman; Dr. Spence Redman, Platte City, and Dr. W. T. Elam, St. Joseph, and authorized Dr. Welch to select a local committee on arrangements.

Authority was given to the Committee on Scientific Work to invite some distinguished guests to our Kansas City Session at a minimum of expense to our Association.

The budget as approved by the House of Delegates at the 1932 session was voted to obtain for the year 1933 up to the Annual Session in Kansas City.

The Committee approved the allowance of \$200 requested by the Jackson County Medical Society to defray expenses of out-of-state speakers for 1932 with the understanding that owing to the present general economic situation that in the future before any money was expended for this purpose it must be authorized by the Executive Committee.

On the recommendation of the Jackson County Medical Society the Executive Committee approved the following Honor Members for nomination as Affiliate Fellows of the American Medical Association: Dr. Charles W. Burrill; Dr. Albert H. Cordier; Dr. John Kanoky; Dr. Charles S. Newlon; Dr. John S. Mott, and Dr. Harry S. Crawford, Kansas City, Missouri (Honor Member Cass County Medical Society).

Acting upon the suggestion of Dr. Goodwin the Executive Committee employed Mr. Elmer H. Bartelsmeyer as Assistant Secretary without any increase in the expenditure of money in the office. It was accomplished in this manner. One clerk was discharged who drew \$1,200 a year and Dr. Goodwin's salary being \$6,000 per year was divided as follows: Dr. Goodwin getting \$3,200; Mr. Bartelsmeyer \$4,000.

The Council approves the recommendation of the President that the expenses of Mrs. Long, President of the Women's Auxiliary, amounting to \$31.56 covering her transportation to Kansas City from St. Louis and return be paid by the State Medical Association.

Dr. Guy Titsworth, Councilor of the Seventeenth District, reported the organization of Benton-Dallas-Hickory-Polk County Medical Society. The Council approved and recommends that a charter be issued.

On recommendation of Dr. P. S. Tate, Councilor of the Twenty-Fifth District, the Council approved the addition of Washington County as a component with the St. Francois-Iron-Madison County Medical Society.

On recommendation of Dr. W. D. Pipkin, Councilor of the Seventh District, Marion and Ralls Counties were hyphenated into the Marion-Ralls County Medical Society.

On recommendation of Dr. P. S. Tate, Councilor of the Twenty-Fifth District, Reynolds County was attached to St. Francois-Iron-Madison-Washington County Medical Society as a component of that Society.

Respectfully submitted,
A. R. McCOMAS, Chairman

On motion of Dr. W. T. Elam, St. Joseph, duly seconded, this report was adopted.

REPORT OF REFERENCE COMMITTEE ON RESOLUTIONS

We, your Committee on Resolutions, recommend

1. That some final disposition of the report of the Committee on Medical Economics be made by the House of Delegates but suggest that the wording in the fifth paragraph be changed to read "When, as a matter of fact the increased cost has been due to the increased use of modern laboratory aid to diagnosis," etc.

2. That the resolution from the St. Louis Medical Society that a resolution be presented to the American Medical Association devising means for the control of delinquent mem-

bers who transfer from one Society to another in a different state be adopted.

We return resolution No. 3 pertaining to the care of indigent patients in Veterans Hospitals without recommendation.

Signed
JABEZ N. JACKSON, Chairman
H. L. KERR
WALTER BAUMGARTEN

Moved by Dr. S. D. Henry, Excelsior Springs, that this report be adopted. Motion seconded.

Moved by Dr. H. Unterberg, St. Louis, that the paragraphs be voted on seriatim. Dr. Henry's motion was withdrawn and Dr. Unterberg's motion carried.

First paragraph: Moved by Dr. A. J. Welch, Kansas City, that this paragraph be adopted; seconded by Dr. C. H. Dixon, Moberly.

Dr. H. Unterberg, St. Louis, moved the following as a substitute:

In considering the cost of medical care, this House of Delegates favors the minority report as submitted to the American Medical Association, and desires to call attention to the fact that the cost to the patient has received the bulk of attention. We desire to suggest that the cost to the physician be given consideration, as the great mounting cost has been mostly at his expense.

Dr. Unterberg's substitute motion, duly seconded by Dr. W. T. Elam, St. Joseph, was adopted.

Second paragraph requesting the American Medical Association to assist county societies in the control of delinquent members moving to another county or state: Dr. Walter Baumgarten, St. Louis, moved that this paragraph be adopted and was seconded. After a lengthy discussion the motion was adopted.

Third paragraph relating to the care of indigents in veterans' hospitals was on motion of Dr. H. Unterberg, duly seconded, laid on the table.

REPORT OF REFERENCE COMMITTEE ON AMENDMENTS TO CONSTITUTION AND BY-LAWS

We have carefully considered resolutions adopted by the Clay County Medical Society and presented by Dr. S. D. Henry to the House of Delegates; we also considered the resolution presented by Dr. H. L. Dwyer recommended by the Council of the Jackson County Medical Society that the dues be reduced from \$8.00 to \$5.00 per annum.

Your committee fully realizes that there is a great need of economy in these times of distress. Yet after due consideration we do not feel that it would be doing justice to the Association and to the membership at large to reduce the dues 37½ per cent at one stroke of the pen and thereby curtail the efficiency and the activities of the Association to that extent. However, we do feel that some relief should be given to the older members of the Association who have spent the better years of their lives in the upbuilding of the profession in this state and now in their declining years when their practice is nonproductive that they should be penalized by being required to keep up payment of dues.

We therefore recommend that Section 1 of Chapter 8 of Revised By-Laws, 1931, be amended by inserting after the word *dues* at the end of the fifth line of said section the following: "Provided further that no member shall be required to pay any annual dues to the State Association after he reaches the age of 68 years but shall be continued as an active member of the Association with all the privileges of active membership in the Association."

Respectfully submitted,
WILLIAM H. BREUER, Chairman
FRANK G. MAYS
CLYDE P. DYER

Moved by Dr. W. H. Breuer, St. James, that the report be adopted. Motion seconded.

After a lengthy discussion the report was adopted.

REPORT OF COMMITTEE ON MISCELLANEOUS AFFAIRS

DR. G. WILSE ROBINSON, Kansas City: The only matter submitted to this Committee was the recommendations of the Cancer Committee.

The Committee on Miscellaneous Affairs approves the major part of this report. We approve the survey; we approve the clinic; we approve public education.

We rather differ with the committee on this proposition of

further institutionalizing medicine. That may be necessary in some cases. Facilities are available at Fulton, so I am told, for the treatment of cancer but one important element is lacking, and that is men capable of handling these facilities, which perhaps could be arranged for. But it is our opinion that in so far as possible the cancer patient should be treated in his own county, or in an adjacent county, and if this can be done at the expense of the State for indigent patients, that the medical profession of his own or the adjoining county capable of administering the treatment should receive compensation for this treatment rather than send the patient to a State Hospital.

Another matter is that the law would have to be changed before county courts will send patients not insane to a state institution. The law demands that someone testify that the individual is insane before he can be admitted to the state hospital at county expense. Our opinion is that indigent patients ought to be cared for by the county and treated in their own or adjoining county. I submit the report with no further remark.

Moved by Dr. H. Unterberg, St. Louis, that the report be adopted. Motion seconded and carried.

THE PRESIDENT: We now come to the selection of the meeting place for 1934.

DR. F. H. SPENCER, St. Joseph: St. Joseph and the Buchanan County Medical Society would like the State Association to meet in St. Joseph next year. St. Joseph has not had the meeting since prohibition.

Moved by Dr. W. T. Elam, St. Joseph, that the 1934 meeting be held at St. Joseph. Motion seconded and carried.

The House of Delegates adjourned.

Wednesday, May 3, 1933—Afternoon Session

The House of Delegates convened at 3:30 p. m., Wednesday, May 3, 1933, with the President, Dr. Joseph W. Love, in the Chair.

The first order of business will be the reading of the minutes of the preceding Session of the House.

On motion of Dr. Jabez N. Jackson, Kansas City, duly seconded, the reading of the minutes of the previous session was dispensed with.

ELECTION OF OFFICERS

Nomination of President-Elect

DR. JABEZ N. JACKSON, Kansas City: As a member of the Jackson County delegation, and pursuant to its unanimously expressed wish, I want to present a name. If the candidate I present were an unknown man it would give me an opportunity for a long speech and an attempt at flights of oratory. Instead, I present the name of a man as well known as any man in the Association. It has long been our belief, as we say in politics, that to the victor belong the spoils; but in a scientific organization the spoils belong to one who has fulfilled certain requirements and who has faithfully served his organization. The name of this man is as well known to every member of this House of Delegates as is my own. Faithful always, he has served as a Councillor in his district for a good many years, and I happen to know that his district is one of the best organized and most progressive Councillor districts. A modest man, a gentleman, our neighbor. I have the honor to present Dr. C. T. Ryland of Lexington, as President-Elect.

DR. W. C. GAYLER, St. Louis: I would like to second the nomination of Dr. Ryland.

DR. G. WILSE ROBINSON, Kansas City: I move that the nominations close and that the Secretary be instructed to cast the unanimous vote for Dr. Ryland.

Motion seconded and carried.

THE SECRETARY: It gives me extreme pleasure to carry out the orders of the House and to cast the unanimous ballot of the House of Delegates for Dr. C. T. Ryland for President-Elect.

The President appointed Dr. W. T. Elam, St. Joseph, and Dr. L. J. Schofield, Warrensburg, a committee to escort Dr. Ryland to the platform.

THE PRESIDENT: Members of the House of Delegates, I present your new President-Elect of the Missouri State Medical Association.

DR. C. T. RYLAND: I certainly appreciate this evi-

dence of confidence. It seems to me there never was a time when we were in greater need of organized, harmonious medicine in the State of Missouri, and if I can do anything that in the least will lessen that need I will be glad, and if not I shall be ashamed of myself and you may be ashamed of me. I want to do the best I can, with your assistance, and do it all through my administration. I thank you.

Report of Committee on Nominations

Dr. W. T. Elam, St. Joseph, Chairman of the Committee on Nominations, submitted the following report:

For Vice Presidents: J. F. Owens, St. Joseph; Hugh J. Wise, Sparta; P. W. Jennings, Canton.

For delegates to the American Medical Association: Delegate, Emmett P. North, St. Louis; alternate, Dr. R. A. Woolsey, St. Louis. Delegate, E. J. Goodwin, St. Louis; alternate, M. Pinson Neal, Columbia.

For Councillors:

2nd District, W. T. Elam, St. Joseph
4th District, J. B. Wright, Trenton
6th District, J. S. Gasbiller, Novinger
8th District, B. Kurt Stumberg, St. Charles
10th District, D. A. Barnhart, Huntsville
12th District, Spence Redman, Platte City
14th District, W. A. Braecklein, Higginsville
16th District, J. T. Hornback, Nevada
18th District, E. C. Shelton, Eldon
20th District, Ralph L. Thompson, St. Louis
22nd District, U. P. Haw, Benton
24th District, T. W. Cotton, Van Buren
26th District, W. H. Breuer, St. James
28th District, W. M. West, Monett
30th District, R. B. Denny, Creve Coeur

We submit the suggestion that the 28th District, composed of Greene, Lawrence, Barry, Stone, Christian, Webster, Polk, Taney and Dallas counties, be divided by the creation of a new temporary District to be known as the 31st Councillor District, composed of Greene, Dallas, Polk and Webster counties, leaving the 28th District to be composed of Lawrence, Barry, Stone, Taney and Christian counties.

We recommend the appointment of Dr. H. A. Lowe of Springfield as Councillor of the new 31st District.

Moved by Dr. W. T. Elam, St. Joseph, that the report be adopted. Motion seconded by Dr. S. D. Henry, Excelsior Springs.

THE PRESIDENT: The report of the Nominating Committee seems to contain more than one subject. The Nominating Committee was appointed to report nominations for officers to be elected but they have included in their report the recommendation that a new District be formed. The Chair rules that this recommendation constitutes new business which according to the By-Laws cannot be considered at this Session without the unanimous consent of the House.

DR. JABEZ N. JACKSON, Kansas City: I gained my knowledge regarding the conduct of business affairs from that master of parliamentary procedure, Dr. Lutz. On one occasion when he was President a matter came up and I said, "Under the Constitution and By-Laws this will have to lie over for one year." He replied, "Oh, what's a Constitution among friends!" I think he was right. I think this action is in accord with the unanimous desire of the delegates, and I move the unanimous consent of the House that the recommendations of the Nominating Committee be adopted in toto.

Motion seconded and unanimously carried.

At this time the new President, Dr. W. L. Allee, Eldon, was escorted to the platform by Drs. Spence Redman, Platte City, and E. Lee Miller, Kansas City.

THE PRESIDENT: Dr. Allee, it becomes my duty as President of this Association to salute you as President of the Missouri State Medical Association, and in token of your office I deliver to you the official symbol of the organization. I hope and trust and

have an abiding faith that our relations in the future will continue as pleasant as they have in the past.

DR. W. L. ALLEE: I thank you, Dr. Love.

THE PRESIDENT: The new President will now submit his appointments for Standing Committees.

President Allee appointed the following members of Standing Committees:

E. J. Goodwin, St. Louis, Chairman of the Committee on Scientific Work.

C. H. Neilson, St. Louis, Chairman of the Committee on Postgraduate Work.

J. C. B. Davis, Willow Springs, Chairman of the Committee on Publication.

J. F. Harrison, Mexico, Chairman of the Committee on Public Policy.

C. E. Hyndman, St. Louis, Chairman of the Committee on Defense.

R. A. Woolsey, St. Louis, Chairman of the Committee on Medical Education and Hospitals.

Floyd Spencer, St. Joseph, Committee on Cancer.

M. P. Overholser, Harrisonville, Chairman of the Committee on Revision of Constitution and By-Laws.

Joseph W. Love, Springfield, Chairman of the Committee on Medical Economics; David S. Long, Harrisonville.

On motion duly seconded the nominations were confirmed.

On motion the House of Delegates adjourned *sine die*.

MEETING OF THE COUNCIL

Congress Room, President Hotel

Monday, May 1, 1933—First Session

The first meeting of Council convened following the adjournment of the House of Delegates, Monday, May 1, 1933, the Chairman, Dr. Arthur R. McComas, Sturgeon, presiding. Roll call showed the following Councilors present:

1st District, O. C. Gebhart, Oregon.

2nd District, W. T. Elam, St. Joseph.

3rd District, J. A. Crockett, Stanberry.

6th District, J. S. Gashwiler, Novinger.

7th District, Walter D. Pipkin, Monroe City.

8th District, B. Kurt Stumberg, St. Charles.

9th District, A. R. McComas, Sturgeon.

10th District, D. A. Barnhart, Huntsville.

11th District, J. H. Timberman, Chillicothe.

12th District, Spence Redman, Platte City.

13th District, A. J. Welch, Kansas City.

14th District, C. T. Ryland, Lexington.

15th District, L. J. Schofield, Warrensburg.

16th District, J. T. Hornback, Nevada.

17th District, Guy Titsworth, Sedalia.

22nd District, U. P. Haw, Benton.

24th District, T. W. Cotton, Van Buren.

25th District, P. S. Tate, Farmington.

26th District, W. H. Breuer, St. James.

27th District, J. C. B. Davis, Willow Springs.

28th District, W. M. West, Monett.

29th District, R. M. James, Joplin.

30th District, R. B. Denny, Creve Coeur.

Moved by Dr. W. H. Breuer, St. James, that the reading of the minutes be dispensed with, and those printed in the JOURNAL adopted. Motion seconded and carried.

Dr. A. R. McComas, Sturgeon, read the Report of the Executive Committee of the Council which on motion of Dr. B. Kurt Stumberg, St. Charles, duly seconded, was adopted.

REPORT OF THE EXECUTIVE COMMITTEE

The Executive Committee held a meeting at Jefferson City on February 13 in conjunction with the Committee on Public

Policy in order that certain measures pending before the legislature might have the attention of both committees, with the chairman, Dr. Arthur McComas, presiding.

The chairman explained to the committee that a mail vote had been taken among the Council in October, 1932, relative to the annual meeting of the Council which is scheduled for November of each year. It was explained to the Council that its annual meeting detailed an expenditure of between \$500 and \$600; that there were few important matters to be considered other than appointing the committee on arrangements for the Kansas City Session in 1933, and that all routine affairs could be attended to by the Executive Committee. The vote on the postponement of the meeting was 29 "yes" and 3 "no." The annual meeting was therefore postponed.

The committee appointed the following General Committee on Arrangements for the Kansas City session; namely, Dr. A. J. Welch, Kansas City, Chairman, Dr. Spence Redman, Platte City, and Dr. W. T. Elam, St. Joseph; and authorized Dr. Welch to select a local Committee on Arrangements.

Authority was given to the Committee on Scientific Work to invite some distinguished guests to our Kansas City session at a minimum of expense to our Association.

The budget as approved by the House of Delegates for the year 1932 was voted to obtain for the year 1933 up to the Annual Session at Kansas City.

The Committee approved the usual allowance of \$200 to the Jackson County Medical Society to defray expenses of out-of-town speakers during the year 1932 with the understanding that owing to the present general economic situation the Postgraduate Committee should handle the speakers for Jackson County Medical Society.

On the recommendation of the Jackson County Medical Society the Executive Committee approved the following honor members for nomination as affiliate fellows of the American Medical Association: Dr. Charles W. Burrill, Dr. Albert H. Cordier, Dr. John Kanoky, Dr. Charles S. Newlon, Dr. John S. Mott, and Dr. Harry S. Crawford, Kansas City, Missouri (honor member Cass County Medical Society).

It was moved by Dr. W. H. Breuer, St. James, that the report of Committee on Public Policy be adopted and that the Council extend a vote of thanks to this Committee for their efficient services to this Association during the last session of legislature. Motion seconded and carried.

THE CHAIRMAN: While we are on this subject, I believe there are some legislators to whom letters should be sent.

DR. W. H. BREUER: I move that the chairman of this Committee be authorized to express our appreciation to those members of the legislature to whom we are obligated. Motion seconded by Dr. A. J. Welch, and carried.

It was moved by Dr. W. H. Breuer that the Report of Treasurer be received and referred to the Auditing Committee. Motion seconded by Dr. W. T. Elam, St. Joseph, and carried.

Dr. D. A. Barnhart moved that the report of the Secretary-Editor be received and referred to the Auditing Committee. Motion seconded and carried.

The Chairman appointed as the Auditing Committee: R. M. James, Joplin; W. M. West, Monett; D. A. Barnhart, Huntsville.

DR. W. H. BREUER: I move that this report be received and referred to the Auditing Committee.

DR. W. T. ELAM: I wish to second that motion. Carried.

A discussion of malpractice insurance was entered into by Drs. W. T. Elam, St. Joseph; W. H. Breuer, St. James; A. J. Welch, Kansas City; Guy Titsworth, Sedalia; O. C. Gebhart, Oregon, and D. A. Barnhart, Huntsville. Group insurance and testimony and loyalty of the physicians were the principal phases.

The Chairman added Drs. O. B. Zeinert, A. J. Welch, W. H. Breuer, W. T. Elam and Guy Titsworth to the Auditing Committee to consider the question of insurance.

It was moved by Dr. W. H. Breuer that the report of the Publication Committee be approved. Motion seconded and carried.

The Secretary at this time presented a communication from the National Food Bureau together with a

resolution similar to one adopted by the California State Medical Association. The communication and resolution follow:

NATIONAL FOOD BUREAU

AN ORGANIZATION FOR THE DISSEMINATION OF FOOD FACTS
7001 North Clark Street
Chicago, Ill.

April 25, 1933.

E. J. Goodwin, M.D., Secy.,
Missouri State Medical Association,
1023 Missouri Bldg.,
St. Louis, Mo.

Dear Doctor Goodwin:

Upon the advice of Mr. Bartelsmeyer I am submitting to you a brief outline on what the Bureau is trying to accomplish.

The National Food Bureau is an organization composed of reputable millers of the United States who created this organization to combat the false propaganda that is being disseminated in this country by commercial organizations, food fakers, and quacks. They are advertising or appearing everywhere—holding free lectures where the gullible are talked into buying special health foods and health courses.

Our program varies considerably as each community has its own problems but in general we work with the press, radio, through the courts, governmental agencies such as Federal trade commission and postal service. Also with state and city officials where needed. We have also assisted in legislation when requested, as we recently did in Illinois when we defeated the Sanatology Bill which was presented by Dr. Clark, the notorious quack of Chicago.

We are asking the cooperation of the Missouri State Medical Association by passing a resolution at their meeting next week condemning the present day food fads, and exaggerated claims made by these unscrupulous organizations and individuals. To date thirty-four state medical societies have cooperated and passed resolutions similar to the ones I have enclosed, and I am hoping that your State Society will do likewise.

I shall be in Kansas City during your convention and would be pleased to appear before your Council or Executive Committee, and go more into detail on the subject. I might also add that if there is any doubt in your mind as to ethics or reliability of our organization I would be pleased to have you wire at my expense the American Medical Association of Chicago.

Very sincerely yours,
R. R. ROSELL

The Council approves the following resolution and recommends its adoption:

WHEREAS, All sorts of food and nutritional fads, supported by misinformation and exaggerated claims and involving grossly unbalanced diets are being advocated by various persons and agencies, and,

WHEREAS, Any diet, consisting of animal protein, fruits, vegetables, especially fresh and green vegetables, the better grades of bread made from flour which contains the necessary vitamins and mineral salts, digestible fats such as butter fat, and other easily assimilable carbohydrates to complete the energy requirements of the individual, is a balanced diet, and,

WHEREAS, The statements that meat, white bread, sweets, or other usual foods incorporated in a general diet are the causes of serious ailments, are not based on scientific facts, and,

WHEREAS, The results of dietary deficiencies have been grossly misstated by faddists, and

WHEREAS, Any special diet should be adopted only upon the prescription of a properly trained physician after complete study of the dietary necessities of the individual; therefore be it

Resolved, That the Council of the Missouri State Medical Association is in full accord with the statements made above and strongly disapproves on the basis of the danger to the public and individual health, of all food fads and special and unbalanced diets.

Dr. Baumgarten, St. Louis, moved that we endorse this proposition and adopt such a resolution as adopted by California as our own. Seconded by Dr. Elam, St. Joseph, and carried.

THE SECRETARY: I would like to ask Dr. Redman if Dr. Winter is here today. He is a member of the Platte County Society and is dean of the Kansas City College of Physicians and Surgeons, a non-recognized school. Somebody wrote in and asked if that is good ethical conduct for a member. I took it up with Dr. Redman and also with Dr. Winter himself, and he wrote he was endeavoring to make this hybrid college a good school which the Board of Health

would approve, as well as the American Medical Association. No charges have been filed against him but I wrote and asked him if he could not have the school inspected at an early date so he could see whether it was worth while to try to put it on a higher basis. He is waiting to appear before us and I wrote him we would be meeting here today, but I have not heard from him. This is simply a verbal report, an attempt to explain to a member who is in active membership why his affiliation with a low-grade medical school endangers his membership in our organization because of the unethical conduct of that school.

DR. W. H. BREUER: I move that the Secretary of Council, the Councilor from that District, and Dr. Welch be instructed to carry this thing through and report further on its progress. Motion seconded by Dr. Elam and carried.

THE CHAIRMAN: You have adopted the report of the Executive Committee, and this report, together with the actions taken here as recorded by the Secretary, will comprise the report of Council to the House of Delegates. The Secretary says that should be approved.

DR. W. H. BREUER: I move that the report of the Executive Committee, together with the resolutions adopted here form the report of the Council to the House of Delegates this afternoon. Motion seconded by Dr. Elam and carried.

DR. W. H. BREUER: For the benefit of the membership I would say that we had a very embarrassing situation relative a conflict in dates of the Auxiliary meeting and the meeting in St. Louis of the Missouri Federation of Women's Clubs as was reported by President Love. I move the expense incurred by Mrs. Long in attending both meetings be approved. Motion seconded and carried.

Reports of Councilors were made by Dr. O. C. Gebhart, Oregon, 1st District; Dr. W. T. Elam, St. Joseph, 2nd District; Dr. J. A. Crockett, Stanberry, 3rd District; Dr. J. S. Gashwiler, Novinger, 6th District; Dr. Walter D. Pipkin, Monroe, 7th District; Dr. B. Kurt Stumberg, St. Charles, 8th District; Dr. A. R. McComas, Sturgeon, 9th District; Dr. Don A. Barnhart, Huntsville, 10th District; Dr. J. H. Timberman, Chillicothe, 11th District; Dr. Spence Redman, Platte City, 12th District; Dr. A. J. Welch, Kansas City, 13th District; Dr. C. T. Ryland, Lexington, 14th District; Dr. L. J. Schofield, Warrensburg, 15th District; Dr. Guy Titsworth, Sedalia, 17th District; Dr. W. H. Breuer, St. James, 26th District; Dr. J. C. B. Davis, Willow Springs, 27th District; Dr. W. M. West, Monett, 28th District; Dr. R. B. Denny, Creve Coeur, 30th District.

THE SECRETARY: Dr. Tate recommended that St. Francois, Iron and Madison be hyphenated, and Washington added. I move that this be done. Motion seconded and carried.

DR. P. S. TATE: My District has five counties, with Washington taken in. Reynolds County has no organization, and I move that we hyphenate Reynolds with the other counties in the 25th District. Motion seconded and carried.

On motion, the Council adjourned.

Wednesday, May 3, 1933—Second Meeting

The second meeting of Council convened May 3 following the final meeting of the House of Delegates, the Chairman, Dr. A. R. McComas, presiding.

On motion of Dr. B. Kurt Stumberg, duly seconded, the reading of the minutes of previous meeting was dispensed with.

REPORT OF AUDITING COMMITTEE

We, the Auditing Committee, appointed by the Chairman of the Council, have carefully examined the books of the Secretary and Treasurer and the financial report submitted by the certified public accountants and find them to be correctly kept.

Your committee feels that the financial affairs of the Association have been carefully handled and are in very good condition. We checked the vouchers issued by the Secretary against the books of the Treasurer and they checked correctly. The financial report of the auditors showed that the books of the Secretary and Treasurer check and are correctly kept.

R. M. JAMES, Chairman
D. A. BARNHART
W. M. WEST
A. J. WELCH
WM. H. BREUER
O. B. ZEINERT
W. T. ELAM
GUY TITSWORTH

May 2, 1933

We, the Auditing Committee, suggest that the Committee on Budget recommend a sufficient amount of money to the Defense Committee that they may be enabled to carry on the work efficiently.

Signed,
R. M. JAMES, Chairman
W. M. WEST
D. A. BARNHART

Moved by Dr. Breuer that the first part of the report be adopted. Motion seconded and carried.

Moved by Dr. W. H. Breuer that \$1,000 be transferred from the General Fund to the Defense Fund. Motion seconded and carried.

ELECTION OF TREASURER

DR. W. H. BREUER: It has been the custom for the last several years that the Treasurer of this Association be located out in the State and we have paid a salary of \$500 to the Treasurer for his services. In these times of depression when our funds are running low it has been suggested, and we have worked out a plan whereby we can save the Association some money. It has been costing us in the neighborhood of \$300 for a bond for the Treasurer, indemnifying the Association against loss. That makes the cost \$800 all together. We have now secured a prominent physician in St. Louis who agrees to accept this position and render his services for one dollar a year, and we can place the money in a large bank without an indemnity bond, which will be just as good as any bond we could get. I now have the pleasure of placing in nomination as Treasurer of this Association Dr. R. A. Woolsey of St. Louis, who agrees to serve for one dollar a year. Motion seconded by Dr. B. Kurt Stumberg, and carried.

DR. W. H. BREUER: I desire to offer a resolution of commendation for the most efficient and intelligent service that Dr. G. W. Hawkins has rendered to this Association during the past years as Treasurer. I want to assure him that it has not been because of any fault with his services, but for the sole purpose of saving the Association money that we move the treasuryship to St. Louis. Motion seconded by Dr. Elam and carried.

The election of officers for 1933-1934 resulted in the election of the following:

Chairman of the Council, Dr. A. R. McComas, Sturgeon.

Vice Chairman of the Council, Dr. W. H. Breuer, St. James.

Secretary-Editor, Dr. E. J. Goodwin, St. Louis.

Assistant Secretary, Mr. E. H. Bartelsmeyer, St. Louis.

Executive Committee, Dr. A. R. McComas, Sturgeon, Chairman; Dr. W. H. Breuer, St. James, Vice Chairman; Dr. Ralph L. Thompson, St. Louis.

Secretary of the Council, Dr. E. J. Goodwin, St. Louis.

DR. W. H. BREUER: In the creation of this new District of which Dr. Lowe is Councilor, there were some changes made in the counties, and they are so jumbled up that it is hard to tell where they belong. I move that the Secretary be instructed to arrange these Districts so that no hyphenated counties will be in separate Districts. Motion seconded by Dr. Elam and carried.

On motion the Council adjourned *sine die*.

MINUTES OF THE GENERAL MEETING

Congress Room, President Hotel, Kansas City,

Tuesday, May 2, 1933—Morning Session

The scientific sessions were held in the Congress Room of the President Hotel, the first convening at 8:30 a. m., Tuesday morning, May 2, with the President, Dr. Joseph W. Love, Springfield, in the Chair.

DR. JAMES R. McVAY, Kansas City: Gentlemen of the Missouri State Medical Association: On behalf of Dr. M. A. Hanna, President of the Jackson County Medical Society, and Dr. Francis Wilhelm, President-Elect, I bid you welcome. Both of these men, whose specialty is helping citizens into this world, were detained because of these duties. Particularly on behalf of every member of the Jackson County Medical Society I want to extend to you gentlemen a most hearty welcome to Kansas City. I know to some of you who have gone to medical school in this town and to some who have served internships here, this is rather a homecoming and we certainly want you to feel at home in every way possible during your stay here. These white badges you see on the local members denote that they are members of the Jackson County Medical Society and we expect and hope that you will call on them for every one of your needs, even though it be cigarettes or getting you out of jail. I am sure that any man who wears a white badge will deem it an honor to serve you in any way he can. Again, we welcome you.

Dr. Joseph W. Love, Springfield, delivered the address of the President, entitled "The Practice of Medicine an Individual Service."

Dr. W. L. Allee, Eldon, delivered the address of the President-Elect entitled "Organized Medicine, the Best Weapon Against Socialized Medicine."

The following papers were read in the Symposium on Diseases of the Liver:

"The Role of the Hepatic Function in Surgical Problems," Dr. Warren H. Cole, St. Louis.

"Parenchymatous Hepatic Disease," Dr. Charles A. Elliott, Chicago.

"The Relationship of the Liver to Other Visceral Organs in Disease," Dr. Ferdinand Helwig, Kansas City.

"The Symptoms and Treatment of the Cirrhoses of the Liver," Dr. George H. Hoxie, Kansas City.

"Jaundice," Dr. Donald R. Black, Kansas City.

Closing discussion by Drs. Warren H. Cole and Charles A. Elliott.

Dr. Wm. H. Olmsted, St. Louis, read a paper entitled "Arteriosclerosis of the Lower Extremities With Special Reference to Treatment in Diabetic Gangrene."

Dr. Ellery M. Hetherington, Kansas City, read a paper entitled "Operation for Retroversion of the Uterus and Varicosities of the Broad Ligaments."

Dr. E. T. Gibson, Kansas City, read a paper entitled "Narcolepsy." Discussion by Dr. Hermon S. Major, Kansas City.

Dr. Carl J. Reis, St. Louis, read a paper entitled "The Increasing Significance of Allergy." Discussion by Dr. Elsworth Smith, St. Louis.

Tuesday, May 2, 1933—Afternoon Session

Dr. Daniel L. Sexton, St. Louis, read a paper entitled "Headache Associated With Endocrine Disorders." Discussion by Dr. August A. Werner, St. Louis.

Dr. Arnold S. Jackson, Madison, Wisconsin, read a paper entitled "Diagnosis and Treatment of Diseases of the Thyroid Gland." Discussion by Dr. John M. McCaughan, St. Louis.

Dr. August A. Werner, St. Louis, read a paper entitled "Effect of the Thyroid, Pituitary and Gonads on Preadult Growth and Development."

The following papers were read in the Symposium on Diseases of the Heart:

"Demonstration of the Lahey Clinic Film of Electrocardiography," Dr. R. C. Davis, Kansas City.

"Auricular Fibrillation and Flutter," Dr. R. C. Davis, Kansas City.

"Heart Block," Dr. Lee B. Harrison, St. Louis.

"Extrasystoles and Paroxysmal Tachycardia Other Than Flutter," Dr. Carl R. Ferris, Kansas City.

"Congestive Heart Failure," Dr. Peter T. Bohan, Kansas City.

"Prognosis and Treatment of Ambulatory Cases Presenting Anginal Syndrome," Dr. Elsworth Smith, St. Louis.

There was no discussion of this symposium.

Dr. A. Morris Ginsberg, Kansas City, read a paper on "Acute Abdominal Symptoms in Heart Disease."

Tuesday, May 2, 1933—Evening Session

Dr. Arnold S. Jackson, Madison, Wisconsin, read a paper entitled "Cause and Prevention of Goiter."

Dr. Logan Clendening, Kansas City, read a paper entitled "Behind the Doctor."

Dr. C. E. Rice, Rolla, presented a motion picture demonstration entitled "Trachoma in the White Population of the United States."

Dr. O. P. J. Falk, St. Louis, read a paper entitled "Treatment of Cardiac Episodes of Middle Life."

Wednesday, May 3, 1933—Morning Session

The following papers were read in the Symposium on Gastrointestinal Diseases:

"Dilatation of the Esophagus," Dr. D. A. Williams, Kansas City.

"Gastric and Duodenal Ulcer: Principles of Medical and Surgical Management," Dr. J. W. Thompson, St. Louis.

"Diagnosis of Acute Intestinal Obstruction," Dr. T. G. Orr, Kansas City.

"Certain Disorders of the Colon," Dr. Harry G. Bristow, St. Louis.

The symposium was discussed by Drs. Willard Bartlett, Jr., St. Louis; D. A. Williams, Kansas City; John M. McCaughan, St. Louis, and J. W. Thompson, St. Louis.

Dr. Willard Bartlett, Jr., St. Louis, read a paper entitled "Renal Complications of Gallbladder Disease." Discussion by Dr. Ferdinand Helwig, Kansas City.

Dr. F. B. Campbell, Kansas City, read a paper entitled "Anorectal Infection: Its Relation to General Medicine."

Dr. Paul V. Woolley, Kansas City, read a paper entitled "Simplicity in the Treatment of Anorectal Diseases."

Dr. George H. Thiele, Kansas City, read a paper entitled "The Referred Symptoms of Anorectal Diseases; Their Probable Modes of Production."

The last three papers were discussed by Drs. Warren R. Rainey, St. Louis; Hudson Talbott, St. Louis; Paul V. Woolley, and George H. Thiele.

Dr. Claude J. Hunt, Kansas City, read a paper entitled "Surgical Treatment of Bleeding Duodenal Ulcer."

Wednesday, May 3, 1933—Afternoon Session

Dr. Thomas B. Hall, Kansas City, read a paper entitled "Enlarging Conceptions of Mycotic Infections of the Feet and Hands."

Dr. A. E. Hertzler, Kansas City, read a paper entitled "A Preview of My New Book on Diseases of the Breast." Discussion by Drs. W. T. Coughlin, St. Louis, and A. E. Hertzler.

Dr. J. E. Glenn, St. Louis, read a paper entitled "The Management of Bladder Diverticulae."

Dr. Richard Sutton, Jr., Kansas City, read a paper entitled "Epithelial Tumors of the Skin."

Dr. J. Hoy Sanford, St. Louis, read a paper entitled "Transurethral Prostatectomy: Indications and Limitations." Discussion by Dr. J. E. Burns, Kansas City.

Dr. E. Kip Robinson, Kansas City, read a paper entitled "Avoiding Complications in Gynecological Radium Therapy."

Thursday, May 4, 1933—Morning Session

Dr. L. C. Boisliniere, St. Louis, read a paper entitled "Simple Silicosis and Silicotuberculosis as a Medical and Industrial Problem." Discussion by Drs. Jesse E. Douglass, Webb City, and Charles W. Ehlers, St. Louis.

Dr. Sam H. Snider, Kansas City, read a paper entitled "Tuberculosis in Childhood." Discussion by Drs. Harry C. Berger, Kansas City, and George H. Hoxie, Kansas City.

Dr. George D. Kettelkamp, Koch, read a paper entitled "Diagnosis and Prognosis of Adult Pulmonary Tuberculosis." Discussion by Drs. H. L. Mantz, Kansas City, and Sam H. Snider, Kansas City.

Dr. J. B. Stokes, Mount Vernon, read a paper entitled "Nonsurgical Treatment of Tuberculosis, Including Pneumothorax." Discussion by Dr. L. E. Wood, Kansas City.

Dr. Duff S. Allen, St. Louis, read a paper on "Surgical Treatment of Pulmonary Tuberculosis." Discussion by Drs. W. W. Buckingham, Kansas City; Earl C. Padgett, Kansas City; J. L. Mudd, St. Louis; Stanley L. Green, Independence, and Duff S. Allen.

Dr. Frank D. Dickson, Kansas City, read a paper entitled "Tuberculosis of the Bones and Joints." Discussion by Drs. James R. Elliott, Kansas City, and L. C. Boisliniere, St. Louis.

Thursday, May 4, 1933—Afternoon Session

Dr. C. E. Rice, Rolla, presented a motion picture demonstration entitled "Trachoma in the White Population of the United States."

Dr. Albert N. Lemoine, Kansas City, suggested that there be organized a permanent section in the Missouri State Medical Association, the Section on Eye, Ear, Nose and Throat.

Dr. John Green, St. Louis, moved that this section be organized. Seconded and carried and the following officers were elected: Chairman, Dr. Albert N. Lemoine, Kansas City; Vice Chairman, Dr. Robert L. Forgrave, St. Joseph; Secretary, Dr. Wm. E. Keith, Kansas City.

Dr. John Green, St. Louis, read a paper entitled "Medicosociologic Aspects of Chronic Glaucoma." Discussion by Dr. Henry C. Haden, Houston, Texas.

Dr. L. W. Dean, St. Louis, read a paper entitled "The Relationship Between Diseases of the Nose, Throat and Ear and Pulmonary Diseases."

Dr. Peter C. Kronfeld, Chicago, read a paper entitled "The Development of the Tear-Sealing Operation Up-To-Date."

Dr. J. Gordon Wilson, Chicago, read a paper entitled "Vertigo."

On motion the Seventy-Sixth Annual Session of the Missouri State Medical Association adjourned *sine die*.

REGISTRATION AT SEVENTY-SIXTH ANNUAL MEETING

Kansas City, May 1-4, 1933

Adair, T. W., Archie
*Adams, Mr. George, Columbia
Aiken, George A., Marshall
Allen, W. L., Eldon
Allen, Chas. E., Kansas City
Allen, Duff S., St. Louis
Ambrose, E. C., Trenton
Anderson, John T., Warrensburg
Arnold, George B., Kansas City
Aschman, T. H., Kansas City
Astrowe, P. S., Kansas City
Atwood, W. G., Carrollton
Aull, John, Kansas City
Austin, C. S., Carrollton
Baer, A. J., Kansas City
Baird, J. E., Excelsior Springs
*Baker, Miss Frances, Kansas City
Baker, Wilbur A., Kansas City
*Bales, Mr. E., Kansas City
Ball, James E., Kansas City
Barden, Frank W., Centralia
Barger, J. N., Albany
*Barker, C. B., Guthrie, Okla.
*Barnett, Mr. F. A., Columbia
Barnhart, Don A., Huntsville
Barson, J. W., Joplin
Bartelsmeyer, Mr. E. H., St. Louis
Bartlett, Willard, Jr., St. Louis
Baskett, E. D., Columbia
Baumgarten, Walter, St. Louis
Beal, Homer A., Kansas City
Beaty, J. G., Chilhowee
Beckman, William, Strasburg
Beil, J. W., Kansas City
Bellows, Geo. E., Kansas City
Belot, Monti, Kansas City
Benham, C. E., Tarkio
Berger, H. C., Kansas City
*Berry, Mr. Max, Kansas City
Black, Donald R., Kansas City
Black, W. Byron, Kansas City
Blair, E. G., Kansas City
Boger, J. W., Sedalia
*Boggs, F. C., Topeka, Kans.
Bohan, P. T., Kansas City
Bohling, Cord, Sedalia
Boisliniere, L. C., St. Louis
Boutros, Amin, Kansas City
Braden, D. R., Kansas City
Bracklein, W. A., Higginsville
Brashear, H. C., Mexico
Breuer, W. H., St. James
Bristow, A. S., Princeton
Bristow, H. G., St. Louis
Brown, E. S., Kansas City
Bruner, C. R., Columbia
Brust, Carl H., Kansas City
Buckingham, W. W., Kansas City
*Bullock, Mr. Harold, Kansas City
Burford, C. E., St. Louis
*Burger, Mr. R. A., Kansas City
Burgher, A. E., St. Joseph
Burrill, Chas. W., Kansas City
Butler, T. R., Lexington
Caldwell, John K., Kansas City
Callaway, Guy D., Springfield
Calvert, Lewis C., Weston
*Calvin, D. B., Columbia
Campbell, A. J., Sedalia
Campbell, Frederick B., Kansas City
Capell, Clarence S., Kansas City
*Caples, Mr. J. T., Columbia
Carle, H. W., St. Joseph
*Carlson, H. E., Kansas City, Kans.

*Carramusa, S. J., Kansas City
Castles, John E., Kansas City
Chalkley, A. J., Lexington
Chamberlain, G. L., New Franklin
Chambers, J. Q., Kansas City
Cheek, Wm. C., Springfield
Cheney, R. E., Salina, Kans.
Chenoweth, L. C., Joplin
Clark, H. M., Platte City
Clark, W. A., Jefferson City
Clasen, A. C., Kansas City
Clinton, L. B., Carthage
Coil, Paul E., Mexico
Cole, Paul F., Springfield
Cole, W. H., St. Louis
*Collins, Mr. R. F., Kansas City, Kans.
*Condon, Mr. Wm., St. Louis
Conley, Dudley S., Columbia
Connaway, J. W., Columbia
Conover, C. C., Kansas City
Conrad, Harry S., St. Joseph
Conrad, R. C., Columbia
Cook, Emmett F., St. Joseph
Cook, W. Albert, Tulsa, Okla.
Cotton, Tolman W., Van Buren
Coughlin, W. T., St. Louis
*Cowan, Lee, Atchison, Kans.
*Craven, P. J., El Reno, Okla.
Craven, Young D., Excelsior Springs
Crockett, M. A., Stanberry
Cullers, Chas. H., Trenton
Curdy, Robt. J., Kansas City
Curran, A. J., Kansas City
Danglade, J. H., Kansas City
Davis, A. W., Kansas City
Davis, David C., Higginsville
Davis, E. C., Kansas City
Davis, H. B., Kansas City
Davis, J. C. B., Willow Springs
Dawson, J. W., Eldorado Springs
Dean, Lee W., St. Louis
Delap, Darwin, Kansas City
Denny, R. B., Creve Coeur
DeTar, Burleigh E., Joplin
*Dickerson, Mr. Donald, Columbia
*Diddle, Mr. A. W., Columbia
*Dillon, I. H., Topeka, Kans.
Dixon, C. H., Moberly
Dixon, F. D., Kansas City
Dixon, J. R., Linneus
Diveley, Rex L., Kansas City
Dodson, J. F., Kirksville
Donaldson, Clyde O., Kansas City
Douglass, Jesse E., Webb City
Dowell, Donald M., Chillicothe
Dumbauld, B. A., Webb City
Duncan, Ralph E., Kansas City
Dwyer, Hugh L., Kansas City
Dyer, C. P., Webster Groves
Dyer, D. P., Sedalia
Edmonds, Oliver R., Tina
Edmonds, W., Moses T., Springfield
Ehlers, Chas. W., St. Louis
Elam, Wm. T., St. Joseph
Eldridge, Charles J., Kansas City
Elliott, B. Landis, Kansas City
*Elliott, Chas. A., Chicago
Elliott, James R., Kansas City
*Elliott, Mr. Wm. H., Columbia
Engel, L. P., Kansas City
Engman, M. F., Jr., St. Louis
*Epler, J. W., Kearney
Eubank, A. E., Kansas City
Evans, Edwin E., Columbia
Falk, O. P. J., St. Louis
*Farrington, Mr. Charles, Columbia

Farthing, R. R., Ozark
Feist, Geo. V., Kansas City
Ferris, Carl R., Kansas City
Ferster, Wm. R., Kansas City
Fischel, Ellis, St. Louis
*Flanders, H. F., Kansas City, Kans.
Forgrave, L. R., St. Joseph
Foster, Hal, Kansas City
*Francisco, C. B., Kansas City, Kans.
Fredendall, Geo. W., Lexington
Freeman, Joseph H., Kansas City
Freeman, S. L., Kirksville
Frick, John Paul, Kansas City
Frick, Wm. J., Kansas City
Frischer, Julius E., Kansas City
*Fryer, C. P., Hiawatha, Kans.
Funsch, E. C., St. Louis
Fuson, L. H., St. Joseph
Galbreath, J. W., Ulrich
Gallagher, W. J., St. Louis
Gashwiler, J. S., Novinger
Gayler, W. C., St. Louis
Gebhart, O. C., Oregon
Geiger, Jacob, St. Joseph
Gestring, Hugh A., Kansas City
*Gibson, C. M., Pittsburg, Kansas
Gilliland, O. S., Kansas City
Gilkey, Harry M., Kansas City
Ginsberg, A. Morris, Kansas City
*Glasscock, E. L., Kansas City
Glenn, Elmer E., Springfield
Glenn, Joseph E., St. Louis
Good, Clarence A., St. Joseph
Goodson, Wm. H., Liberty
Goodwin, E. J., St. Louis
Gore, A. E., Marshall
Gove, Herman S., Linn
*Granger, W. B., Emporia, Kans.
Green, John, St. Louis
Green, John R., Kansas City
Green, Stanley L., Independence
Griffith, A. Comingo, Kansas City
Grogan, Frank M., Nevada
*Grosdidier, Mr. E. J., Kansas City, Kans.
*Gsell, J. F., Wichita, Kans.
*Gulick, Addison, Columbia
Gunn, P. D., West Plains
Gunn, A. J., Versailles
Gunn, W. G., Versailles
*Haden, Henry C., Houston, Tex.
Hall, Thomas B., Kansas City
Hamilton, Buford G., Kansas City
*Hamilton, Howard, Kansas City, Kans.
Hamilton, Hugh G., Kansas City
*Hanicke, Mr. Erich, Kansas City
Hanna, M. A., Kansas City
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E. J. GOODWIN, M.D., Editor
1023 Missouri Building, St. Louis, Mo.
Telephone, Jefferson 5261.

PUBLICATION COMMITTEE { J. C. B. DAVIS, M.D., Chairman
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SILICOSIS AND SILICOTUBERCULOSIS

LOUIS C. BOISLINIERE, M.D.

ST. LOUIS

The deleterious effect of the inhalation of mineral dust was well known to the ancients. Pliny (B. C. 23), the poet, Lucretius (B. C. 96), Paracelsus (1534), Agricola (1556) and many others were so impressed by it that they included it in their writings. Agricola, beautifully Englished by former President and Mrs. Hoover, states that it was not uncommon to find women in the mining districts who had married seven times, and there were no divorces those days. The Colorado miners refer to certain dust producing air drills as "widow makers."

Bernardinus Ramazzini in his book "De Morbus Artificum" (Diseases of Tradesmen) fully describes all industrial hazards and especially the great hazard of mineral dust. He is the pioneer of "modern" industrial medicine. We find references to "pneumoconiosis" throughout medical literature. It was not, however, until very recently, about 1912, that worthwhile research and clinical work was undertaken. The prevalence and appalling effects of mineral dust on the workers in the gold mining districts of the Rand, South Africa, stimulated and initiated a world-wide study and research in silicosis, culminating in the "International Conference on Silicosis" held in Johannesburg in 1930.

It is of great interest to the Missouri State Medical Association to know that the first state or Federal investigation of silicosis as a health hazard in this country was undertaken in the Joplin district of Southwestern Missouri. It was a matter of common knowledge that there was an unusual amount of consumption among the miners in that district. Consequently the physicians of that locality, keenly alive to its importance in itself and as an added hazard to

the whole community in the spreading of disease, organized the Jasper County Antituberculosis Society. In 1914 this society petitioned the Surgeon General of the Public Health Service for assistance. In response to this request, Dr. A. J. Lanza, Past Assistant Surgeon, U. S. Public Health Service, together with Mr. Edwin Higgins, Mining Engineer of the Bureau of Mines, launched in 1916 a most complete investigation of the whole subject from every possible angle. With the fullest cooperation of the physicians, medical society, mine owners and citizens of the communities, Dr. Lanza and his collaborators completed their invaluable work, much of which was pioneer and original, with such meticulous scientific accuracy that the vast importance and great value of their work is fully recognized among all investigators of this subject throughout the world. The study of silicosis, on account of its immeasurable importance as an industrial, sociologic and health problem, has become world-wide. At the next meeting of the National Tuberculosis Association in June a symposium on silicosis and silicotuberculosis will be held, to be participated in by the greatest Canadian and American authorities, including Dr. Lanza.

The prevalence of silicosis and silicotuberculosis in certain specific industries and occupations throughout the United States is very great, especially among granite workers, sand blasters, miners, excluding coal miners, grinding gravel for roofing and other purposes, in the manufacture of glass and abrasives, pottery makers and other industries where the air contains large quantities of fine powdered silica. As a problem that comes directly home to us the prevalence of silicosis in our midst to some extent at least can be estimated when we consider that Missouri is a mining state especially of lead and zinc and that there are many other industries in which silica is present in finely divided particles in the air breathed by the workers. In the last few years a sort of a psychosis or silicaphobia has developed among men who have ever at any time worked in a mine

or been exposed to the inhalation not only of silica but of any and all other mineral dusts, even organic dust, no matter for how short a period or under what conditions of the air they breathed. Most of these men are honest in their claims for compensation. Others are actuated by the hope of reward and still others, I am sorry to say, have been induced to file claims by unethical lawyers. There is merit in many of these claims, but in a great portion of them there is no merit whatsoever that a most meticulous and complete medical examination can reveal. For instance, in the *St. Louis Post-Dispatch* of March 19 last it was stated that there were five million dollars of claims against the National Lead Company operating the St. Joseph lead mines in Southeast Missouri, and that approximately five hundred thousand dollars had been expended in settling some of these claims. In some authoritative data furnished me one company (gravel crushing) had one hundred claims among one hundred seventy-five workers; fifty of these had filed suit. There was merit in one fourth of the claims. Hundreds of claims by workers in lime quarries and lime manufacture and cement have been filed in Missouri. In Illinois 23 suits were filed in two days against an abrasive company. In a very exhaustive survey entitled "Silicosis and Tuberculosis Among Miners of the Tristate District of Oklahoma, Kansas and Missouri" in 7,222 examined (miners and men seeking employment in the mines) at Pitcher, 5,704 (73.9 per cent) did not have sufficient symptoms or signs referable to the lungs to be diagnosed as having either silicosis or tuberculosis. A group of 1,647 (21.3 per cent) was definitely diagnosed as silicosis, not including those diagnosed as tuberculosis. Of this number (1,647) 1,362 were classified as being in the first stage of silicosis, 253 in the second stage and 32 as being in the third stage. Two hundred and sixty-seven were diagnosed as having silicosis complicated with tuberculosis and 104 as having tuberculosis without silicosis.

The foregoing gives us some idea of the prevalence of silicosis among silica workers. The importance of this subject as an industrial problem not only to the workers but also to the employers is glaringly apparent and it must be met for the sake of both. It is also apparent that doctors must familiarize themselves with the approved medical standards of diagnosis of silicosis and in so far as possible with the evaluation of the degree of impairment in the industrial capacity of each individual whom we examine in order to mete out to employee and employer equal justice by an absolutely unbiased and uninfluenced diagnosis and opinion.

Any other conclusion is unthinkable among ethical physicians.

The generic term for all dust diseases or accumulations of dust in the lungs is pneumoconiosis, or pneumoconiosis, which is more commonly used in this country. The term pneumoconiosis was first used by Zenker in 1866. The term silicosis is the specific, restricted term used to designate the accumulations or deposits of silica in the lungs. The qualifying term simple silicosis is used to designate the pathological and dysfunctional defects in the lungs brought about solely by the accumulation of silica dust therein. The term infective silicosis means simple silicosis plus an added infection.

Inasmuch as the infective organism of greatest moment is the *B. tuberculosis*, silicotuberculosis or tuberculosilicosis is the accepted term used to designate the combination or merging of these two distinct disease entities, simple silicosis and tuberculosis, together with all their interacting interrelationships.

Simple silicosis is acquired by the inhalation of free silica, that is, silicon dioxide (SiO_2) or crystalized quartz, and by no other mineral dust or other combinations of silicon, as the silicates. Free silica is the only direct phthisis producing dust. It therefore constitutes the greatest of all industrial hazards in dusty trades. All other mineral dusts are therefore hazardous only in proportion to the amount of free silica that they contain. As simple silicosis in itself may result in complete invalidity and even death, it presents the greatest of the medical and industrial problems that confront the physician in dusty trades.

Certain prerequisites must obtain in order to produce silicosis, viz.: (1) The air breathed must contain a sufficient amount of free silica, probably and usually not less than 15 per cent; (2) this dust must be phagocytized; therefore the air must contain a large quantity of finely powdered, flour-like, almost impalpable dust not larger than the diameter of the phagocyte itself (about ten microns). (One micron is $1/125,000$ of an inch.) In fact, the phagocytized dust rarely measures more than one to three microns in diameter; (3) this fine dust must reach the interior of the primary unit or lobules. The dust can reach the alveoli only by resisting and overcoming all the defensive mechanisms that Nature has provided for the protection of the lung against the assaults of inhaled offensive matter. It has been proved in experimental animals exposed over a long period of time to the inhalation of air laden with dust far more than is ever encountered in the trades, that 50 per cent is held up in the nose and nasopharynx, a further large quantity is held up in the throat

and bronchial tubes, and finally only 4 to 24 per cent of the silica dust drawn into these passages reaches the alveoli.

In man, Nature has provided much more extensive and efficient protective apparatus than in the small experimental animals, so that probably a lesser percentage of inhaled dust reaches the alveoli in them. A large quantity is held up in the tortuous passages in the nose by its hairy moist walls, a further large quantity is held up in the nasopharynx, pharynx, larynx, trachea and bronchial mucous membranes. This held up dust is removed by the abundant and effective cilia and bronchial musculature to the pharynx where it is expectorated or swallowed with the dust that has accumulated in the nasopharynx. So effective are these natural defensive mechanisms that only a very small percentage of the inhaled dust ever reaches the primary unit or lobule. The removal of the dust is further facilitated by the fact that the inhaled silica dust is usually accompanied by other and more hygroscopic dust, which with the mucus tends to mass the silica into small boli which are easily removed. The sensitive cough reflexes remove quantities of dust before it passes beyond the main bronchi.

It therefore has long been observed that men with nasal obstructions necessitating mouth breathing, or with atrophic rhinitis, acquire silicosis earlier than others with unimpaired natural defenses. The bronchiolar musculature and columnar ciliated epithelium continue well into the vestibule, where the plain musculature ceases and the ciliated columnar epithelium gradually changes into cubical and nonciliated epithelium (the end of the defensive mechanism). It is from this cubicle, cuboidal or flattened nonciliated epithelium that the phagocytes originate. The cells of this cuboidal epithelium, irritated by the dust, swell up, become detached and develop their phagocytic function, the so-called "macrophage," "septal" or "dust cells." The exact origin and nature of these cells have not definitely been decided upon. There may be more than one type of cell involved. All agree that the transportation of dust throughout the lungs is by means of the phagocytes and not by the penetration of the epithelium by the sharp silica crystals without the aid of the phagocytes.

The vehicles carrying the dust are the dusted phagocytes or dust cells which, traveling along the highways and byways of the lymphatic system and lymph channels, which are quite as distinct as the arterial or venous system, attempt to reach their proper destination, the tracheobronchial lymph glands, which, outside the lung proper, represent the dumping ground of the pulmonary lymphatic system and may be the

final repository of relatively large amounts of dust. En route, there are many filling stations, lymph spaces or aggregations of lymphoid tissue or cells which act as traffic cops or essential filters, allowing some of the vehicles to continue to their destinations but holding up others. The arrivals may be greater than the departures resulting in a veritable traffic jam at these places. This will occur more readily if the tracheobronchial lymph nodes have by previous infections, as early tuberculosis, become filled, calcified or fibrosed. These dust cells set up in the lymph spaces a fibroblastic activity resulting in a proliferation of fibrous tissue which englobes them, constituting the silicotic nodule. A diagnosis of silicosis cannot be made until these silicotic nodules no matter how minute become recognizable or detectable by clinical or radiological means. These silicotic nodules, discrete at first, may coalesce producing large masses of hyaline fibrous deposits throughout the lung. Their potential capacity for exciting proliferation seems to be nearly unlimited, so that a sort of fibromatosis or keloidosis is set up that may involve the greater part of both lungs. Nearly complete pulmonary dysfunction and even death may occur without clinically detectable intercurrent or awakened infection. Vital capacity is *pari passu* reduced, causing a relative anoxemia with profound metabolic disturbance. Cardiac hypertrophy and dilatation, caused by the *vis a fronte* of the obstructed pulmonary circulation, may ensue and is frequently the immediate cause of death.

So silicosis is a progressive disease, slowly acquired over a long period of exposure and ranging from little or no pulmonary disturbance and no impairment of industrial capacity to complete lung dysfunction, permanent invalidity and even death.

Were silicosis solely a fibromatous disease, as described above, it could in no way specifically and directly cause tuberculosis, as proliferation or hyperplasia in tuberculosis is the desideratum in limiting and arresting tuberculous disease. There must be other factors.

All agree that silica undergoes a slow solution in the lung, probably colloidal in character, and thus becomes a direct cell and tissue poison which by its colloidal nature more readily permeates the lung structures, both normal and pathologic. Thus it is that old latent tuberculous foci are reached and stimulated into activity and the lung itself becomes a fertile field for exogenous infection. Some of the dust cells themselves are destroyed by this poison, its dust particles liberated to be taken up by other phagocytes and thus the disease spreads to new localities. Some think that

these phagocytes are stimulated to a high degree of hypermobility and that they penetrate the fibrous protective tissue, englobing and enmeshing nonactive tuberculous foci and rendering them active.

It is held by some that the sharp particles may pierce the cell wall and its fibrous covering, exciting more fibrosis and taken up by other phagocytes may further penetrate into the lung field and attack areas with incarcerated tuberculosis bacilli, exciting them to active aggression. Others hold that the silica may sometimes be converted by this colloidal solution into a kind of jell and thus be rendered harmless.

The fact remains that silicosis renders the individual more potentially liable to tuberculosis. Silicosis by no means always progresses after the hazard has ceased, nor does it always produce tuberculosis. In many instances the hyaline silicotic nodules when once formed remain in situ and do not spread.

Among the granite workers it takes from 3 to 6 years before silicosis appears and a longer period, generally twenty years or more, before the incidence of tuberculosis becomes markedly manifest. There is also a universal occurrence of simple silicosis among workers in granite dust, which contains about 35 per cent of pure silica, after 6 to 10 years' exposure.* Dust containing less than 20 or 25 per cent of free silica and less than ten million particles to the cubic foot is not usually dangerous. The incidence of tuberculosis and its mortality is appalling among those exposed for twenty or thirty years to air containing sufficient silica.

The incidence and course of the disease sometimes differ vastly from that of simple, ordinary adult tuberculosis. Its peak is between 40 and 60 years of age instead of 20 and 35 years as in ordinary tuberculosis. The cell poisoned lungs with their many areas of degenerate (fibrotic) tissue seem to necrose, caseate and cavitate with rapidity and sometimes in several places, strongly suggestive of Koch's phenomenon. It seems to be rather a silicophthisis than a silico-tuberculosis. It is appropriately called miner's or grinder's consumption. Frequently its course is chronic but usually without the tendency to heal as in ordinary tuberculosis.

Physicians are consulted by the tradesmen themselves, or they are referred to us by their employers for the diagnosis of silicosis or its exclusion, and its effect upon the industrial capacity resulting directly from the inhalation of silica dust. As these cases almost invariably involve compensability a double responsibility confronts us equally to the employee and em-

ployer. In the absence of legal regulatory measures the question of compensability depends almost entirely upon our judgment and conclusions. A thorough, complete, meticulous clinical investigation is demanded so that equal justice be meted out to both employer and employee.

This will necessitate a most careful industrial history covering the whole industrial life before, during and after the exposure, the extent and character of the offending dust conditions, duration of exposure, its continuity or interruptions, etc. A complete medical history must be obtained antedating, during and subsequent to the exposure. Symptoms and complaints past and present must be evaluated. As these symptoms are subjective they are frequently minimized or exaggerated, knowingly or unknowingly. They are inconclusive and unreliable unless substantiated by objective evidence. For instance, a man complaining of dyspnea cannot hop on one foot fifteen or twenty times without causing undue alteration of respiration rate and rhythm, if shortness of breath actually exists; and so with other symptoms. They must have some objective reality to be properly estimated.

The physical examination must be complete and every organ and function of the body interrogated. In examining the chest any visible or palpable deformity of chest or spine, retractions, depressions or rigidity should be noted. Its movement on respiration, whether ample or deficient, jerky or lagging, should be observed. The diameter of the chest at the nipple line on forced expiration and deep inspiration should be measured. Every part of the chest should be percussed, noting hyporesonance or hyperresonance anywhere, and whether one or both lungs fill the complementary spaces in the pleural space on deep inspiration.

The heart should be outlined, preferably by orthopercussion. Careful auscultation, preferably by comparing inspiration and expiration on one side with the other at the same levels, should be carried out. Character of respiration, whether feeble, exaggerated or harsh and where, should be observed. Any abnormal changes in breath and voice transmission and the locality in chest should be recorded, as well as any and all adventitious sounds, as rales, pleural friction or roughness. Persistent moist rales, or even granular or rough, not harsh, breathing heard in the apices or midlung section are strongly suggestive of tuberculous infection. The heart should be carefully examined for functional or organic disturbances. The arteries are palpated. The pulse and respiration rate, sitting, standing and after exercise, should be carefully noted.

* Russell: United States Public Health Bulletin No. 187.

A complete differential blood count, including a Schilling count if possible, and a Kahn or Wassermann test, especially where lues is suspected, should be made. Urinalysis and sputum examinations should be made, and any other laboratory measures should be carried out if indicated.

By these measures, clinical and laboratory, any extrapulmonary pathology may be revealed which not infrequently is the real cause of the disability, symptoms and dysfunctions.

Simple silicosis is a disease whose manifestations are due specifically to the mechanical interference with lung function by the deposits of silico fibroses therein. Therefore the extent of lung dysfunction and the abnormal physical signs elicited are proportionate thereto: It is not a disease caused by pathogenic organisms and their toxins. The patient may not feel sick at all except for breathing embarrassment and pains in the chest. He is usually robust and healthy in appearance. The physical signs may be suggestive but are rarely conclusive in the early or moderately advanced cases. Unquestionably, therefore, the radiograph furnishes the most reliable single means of objective evidence in determining the existence, extent and stages of silicosis and the presence or absence of tuberculosis. A diagnosis or opinion is never complete or conclusive unless it be based on radiographic and clinical and laboratory examinations.

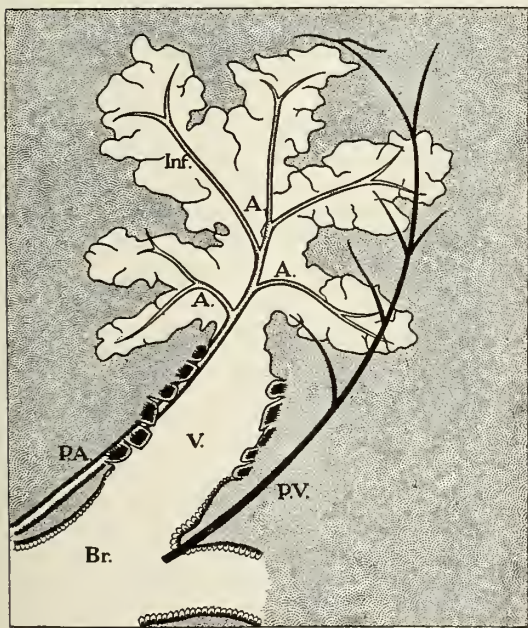


Fig. 1. Primary unit or lobule of the lung. The cilia and the bronchiolar musculature extend well into the vestibule. (See Ref. 3.)

Inf., Infundibulum; A., Atrium; V., Vestibule; Br., Bronchiole; P A., Pulmonary Artery; P V., Pulmonary Vein.

The radiographer must not be considered a mere technician, but must be a full consultant in the case. The clinician must insist that the radiologist give a complete description of all of the lung, both normal and abnormal appearances.

Stereoscopic plates should always be made and they must be as technically perfect as possible. The statement that there are "considerable fibrotic changes" means nothing. The character, distribution and extent of this fibrosis must be stated. These ramifying fibroses or arborizations are often found in healthy lungs. These sclerotic changes are often due to age, former respiratory infections, as pneumonia, grippe, recurrent "colds," the wear and tear of a life of effort breathing, old healed tuberculosis, and in urban dwellers and others subject to the inhalation of smoke and soot.

The lymphatics and lymphatic stream, coursing along the peribronchial and perivascular trees leading to the tracheobronchial lymph glands outside the lungs, are thus the cleansing apparatus of the lungs.

The roentgenologist should state his opinion in this regard as unequivocally as possible.

Any invasion of the lung by animate or inanimate matter, if it be taken up by the lymph stream, may result in a "fibrosis" or thickening of bronchial, bronchiolar and vascular walls causing heretofore imperceptible branches of the peribronchial and perivascular tree to become visible. This visible arborization is comparable to "the branching of a leafless tree in which the smallest branches now become visible." Even if this arborization becomes generalized and its ramification reach to its periphery, the lung is still classified as "essentially negative" so far as silicosis is concerned, because the pathologic causes of these ramifying fibroses may not be of silicotic origin. They are always present in silicosis but in themselves are not pathognomonic of silicosis. The essential factor in silicosis is the fibrous silicotic nodule. A diagnosis of silicosis cannot be made until these nodules become visible and detectable in the picture.

The essentials then of radiographic diagnosis of silicosis are, generalized visible arborization or branching of the bronchial or vascular tree well into the lung field, silicotic fibrous nodules and enlarged or denser hilum glands.

In the earliest stages of silicosis these nodules, "beads," or "bronchial buds," begin to appear along the bronchial tree near the hilum but well out in the lung field. They may at first be few in number. "The leafless tree is beginning to put on leaves" or to bud. They appear in both lungs as discrete mottlings which are character-

istic of the disease. A diagnosis of silicosis cannot be made without the visible presence of these silicotic nodules. They sometimes first appear in the subpleural lymph spaces. The lung field between these fibrosed peribronchials with their buds is clear and translucent in the earlier stages of the disease. The hilum glands are denser than normal. In the early stage the clinical symptoms and physical signs may be very slight and few. There may be an unproductive cough due to a "dry bronchiolitis." Respiration is usually full, rhythmical and even. No abnormal changes in the percussion note occur. Auscultation reveals no increased transmission in the intensity and pitch of voice and breath sounds. No adventitious signs, as rales, pleural roughening or friction, are heard. Dyspnea may be complained of but usually cannot be substantiated objectively. The man is usually robust and there is no incapacitation in his work due to silicosis. This condition is usually classified as "slight," "early" or "first stage" silicosis.

If the disease progresses the nodules increase in number, size and density. A more mottled grouping of them occurs but they remain discrete. This mottling is usually bilateral and more or less symmetrical and may begin to extend into the parenchyma of the lung. Their grouping and distribution in both lungs may aid in distinguishing them from the deposits caused by old healed tuberculosis, especially of childhood infection, which is usually more unilateral and the deposits more calcified. If a calcified Ghon's node is found with regional calcified hilum lymph nodes the diagnosis of healed tuberculosis is well substantiated. We are often confronted with the problem of distinguishing between healed tuberculosis and silicosis. In the "second," "more marked" stage the nodules are greater in number, bilateral, somewhat larger in size, more dense and more widely distributed along the peribronchial tree and may begin to invade the lung field, but they are still usually discrete. The hilum is possibly more dense. The diaphragm may be "peaked" by pleural thickening. The man is usually healthy looking. He may be somewhat dyspneic on exertion. There is more or less respiratory disability. The expansion of the chest may be somewhat limited, possibly on one side more than on the other. Inadequate fatiguability is often complained of, as well as a "tightness" or pain in the chest. The percussion note and stethacoustic signs are only slightly altered. There may be an increase in certain areas of voice and breath transmission in the midlung field. His capacity for work may or may not be affected.

As the disease progresses to the "very well marked," "advanced" or "third stage," the nodules tend to become larger, more numerous, more dense and begin to coalesce and blend, forming sometimes large, dense fibromatous areas, usually bilateral and in the midlung field, the so-called "snow storm" appearance of silicosis. These fibrous areas may involve large parts of one or both lungs, may obscure or render invisible the underlying arborization or thickened peribronchials. As a consequence, almost complete respiratory dysfunction may exist proportionate to the lung tissue invaded by the progressive silicotic fibrosis. The respiration is shallow, chest expansion reduced to a minimum. He is utterly dyspneic. His lips and extremities are frequently cyanotic. The chest may be rigid and move as if *en cuirass*. There is increased dullness on percussion, voice and breath transmission, when not feeble, is increased in intensity and pitch and harshness. The man may grow rapidly worse and death may be imminent. As the disease approaches and even before it has reached the "third" or "advanced" stage, there may be complete invalidity and even total industrial incapacitation, but this is not always the case.

There is no definite demarcation between one stage and the next as the disease is very slowly progressive. The anatomical classification into "stages" is utterly arbitrary but serves the purpose of description. "Minimal or slight," "definitely marked," "advanced" and "far advanced" will serve as well; and better still if correlated with the physical findings and clinical symptoms, as different individuals react differently to the degree of anatomical involvement, just as they do in other anatomicopathologic conditions.

In silicotuberculosis, as in simple silicosis, the radiogram is usually the best single criterion. Granular or rough (not harsh) breathing or persistent posttussive rales may be detected, usually in the upper part of the lungs, before any demonstrable progressive changes appear in the radiogram.

If there be a "shift to the left" in the Schilling count, or change in the sedimentation, the monocytic-lymphocytic ratio or the Medlar count, it may indicate or suggest that the silicotic hyperplasia is being invaded by the added infection of tuberculosis. The trend of silicosis to or its merging into tuberculosis will show not infrequently first in the blood, second by the physical signs, third in the radiogram and fourth in the symptoms. If the sputum shows the B. tuberculosis the diagnosis is established. However, it is the usual symptoms of tuberculosis and our general impression of the case

that first directs our attention to the probability of a coincident tuberculosis and should at once call for careful physical, serologic and biologic investigation even if the supervention of tuberculosis is only suspected.

Tuberculosis and silicosis when they coexist demand immediate cessation from all work. The prognosis in silicotuberculosis is always unfavorable. It may be insidious and chronic like ordinary tuberculosis, its progress possibly retarded by the silicotic fibroses, or it may rapidly progress to cavitation. The disease shows much less tendency to heal than in ordinary tuberculosis.

SUMMARY

To summarize, silicosis is a pathological condition of the lungs due to the inhalation of free silica, i. e., silicon dioxide (SiO_2) or crystallized quartz.

The air breathed must contain fine particles of free silica not more than 10 microns in diameter, but usually two or three microns, in sufficient quantity, probably not less than 20 to 30 per cent per cubic foot of air. These particles must reach the interior of the primary lobule where some of them are phagocytized, constituting the dust cell. This fine dust can reach the lobule only by overcoming the expulsive mechanism of the air passages. These dust cells must be taken up by the lymphatics and must be arrested somewhere along the lymphatic stream in its course to the tracheobronchial lymph nodes, thus overcoming or clogging the cleansing mechanism of the lung.

Mere exposure to silica dust is not prima facie evidence of silicosis. The dust must be in sufficient quantity and fineness and the exposure must be long enough to overcome the defensive and cleansing mechanisms of the lungs.

It is the accumulation of these dust cells in the intrapulmonary lymphatics and the gradual development of fibrous tissue within and about these accumulations of dust laden phagocytes, resulting in the formation of the characteristic silica nodule of hyaline fibrous tissue that constitute the disease silicosis. The fibrotic nodules extend by further fibrosis at their periphery. They tend to coalesce, sometimes forming large fibrotic areas in both lungs.

DIAGNOSIS

The diagnosis is made or denied by (a) history of exposure to silica dust and its duration; (b) physical examination and evaluation of symptoms; (c) radiogram must reveal the silicotic nodule, nodules or nodular mottlings. *No nodules, no silicosis.* Ramifying fibrosis or arborization of the bronchial or perivascular

trees (thickened peribronchials) following the lymphatics along their course, even though they extend from the lobules or periphery of the lung to the tracheobronchial glands do not in themselves warrant a diagnosis of silicosis. There may be other causes for ramifying fibroses than silicosis. The silicotic nodule or nodules must be present and visible in the plate along or near these thickened trees and in addition to them.

Radiographic essentials are, ramifying fibroses, silicotic nodules and thickened tracheobronchial glands.

The industrial capacity or impairment can best be evaluated by a complete physical survey, interrogating every organ of the body with laboratory aids so that a general inventory of physical assets and liabilities be attempted. The physical liabilities affecting working capacity are thus revealed and frequently have nothing to do with the actual or alleged silicosis. Objective evidence of all symptoms should be sought for and elicited if possible in order to evaluate them properly.

Silica is the only direct phthisis producing dust. Silicosis is therefore the most important of all mineral dust hazards.

The literature on silicosis is voluminous. In lieu, therefore, of citing each authority for every statement made, a list of references has been appended which amply cover the whole subject.

320 Lister Building.

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DISCUSSION

DR. JESSE E. DOUGLASS, Webb City: Silicosis is a tremendous subject and is becoming of vital interest to anybody who has the least contact with it. In the past it has been passed over without much work being done on it and now it is a serious problem in industry. Most of our talk is about the hazard to the industry itself but let us look at the other side, at the man who actually has silicosis. That is worse than the financial effect on the industry. You cannot do anything for a man who has advanced silicosis. He is miserable, his symptomatology is plain but still he can get no relief.

The diagnosis of silicosis is not easy. It requires quite extensive study and in any case you must make a differential diagnosis between true silicosis and tuberculosis. These fine points of diagnosis will not be made without a good deal of work.

You first get the history of the man who is ill and whether he is working in the silicate industry. Not every man who works in this industry develops silicosis even in mild degree, nor does every individual who lives in a silicate district have even a small amount of silicosis. You must be in the hazardous occupation and even then you may escape it. So you must have a definite history of the patient working in the silicate industry. In developing your history try to get the length of time he has been there for that is the principal point in your history after the symptomatology. Men who have far advanced silicosis have a definite chain of symptoms. They have a terrible cough, and expectorate all out of proportion to what you would think they would. They often have vomiting and may even vomit the breakfast. In true silicosis there is not necessarily fever. In many cases with fever there is also tuberculosis. They oftentimes lose weight, but the prominent feature is terrific dyspnea. They cannot walk half the length of this room without sitting down and panting.

After you get the history you go on with the physical examination, and what does this examination show you? That is the unfortunate thing in true silicosis, there are comparatively no physical findings. I think perhaps there are different types of silicosis in different fields. I am anxious to get reports from the workers in South Africa about the silicosis there. When you examine these men you do not have the characteristic rales, you do not have much breath changes, there is little impairment on percussion. You can scarcely find dullness or none at all.

Then comes the roentgen ray examination, which is very important, but not too important. I have heard the statement that the diagnosis of silicosis can be made with the roentgen ray. That is not true, because you are confused with tuberculosis. You want the roentgen ray dovetailed with the physical findings and with the history.

Leo L. Mayer, Chicago (Journal A. M. A., April 15, 1933), summarizes the present knowledge of word blindness and presents the case records of five patients suffering from acquired, congenital and partial (strephosymbolia) word blindness, in whom ocular dominance was the outstanding feature. It is important to determine the dominant eye; it is of value to the ophthalmologist and to the patient's future. It is hoped that, by bringing such a condition to the attention of the ophthalmologist, a saner regard will be stimulated for young children with partial word blindness, and thus the stigmas of "mental defectives" will be lifted from them.

OSTEOCHONDROMATOSIS

REPORT OF CASE

WALLIS SMITH, M.D.

SPRINGFIELD, MO.

Osteochondromatosis is a rare condition in which bodies of cartilage and bone are found in the joint cavity. These bodies have their origin in the synovial membrane.

ETIOLOGY

The knee is the joint most commonly involved and the condition is usually monoarticular. Cases have been reported, however, in which both knees were affected. It is a disease of adult life, seldom appearing before the age of twenty. There is a diversity of opinion as to whether the process is of traumatic, infectious or neoplastic origin, though the latter is the view most commonly held.

PATHOLOGY

The joint may show no gross lesions other than the presence of loose bodies free within its cavity. The number of these may vary from one to several hundred, their size from a few millimeters in diameter to several centimeters. Or the joint may be characterized by a synovial membrane showing proliferations. These are hypertrophied villi containing cartilaginous and osteocartilaginous bodies. The two conditions may be found associated, the joint showing proliferations of its synovial membrane, together with free bodies within the joint cavity. The loose bodies have their origin within the villi. Some are of fibrocartilage, some of fibrocartilage with bone in the interior, and some are of pure bone.

SYMPTOMS

The patient suffers from attacks of locking of the joint with severe pain due to the bodies becoming caught between the articular surfaces. He may notice crepitation with movement of the joint. The motion of the joint is restricted if the involvement is extensive. Palpation may or may not reveal the presence of the loose bodies.

TREATMENT

The treatment consists of removal of the loose bodies by open operation. If there is extensive involvement of the synovial membrane it is necessary to remove this as well.

REPORT OF CASE

E. R., aged 40, a farmer until four years ago, entered the Springfield Baptist Hospital, August 16.

Read at the staff meeting of the Springfield Baptist Hospital, Nov. 14, 1932.

1932, because of trouble with his right knee. He associated the trouble with a sprain of the same knee received nine years before from which he believed he had never fully recovered. Six years ago the joint had begun swelling and growing stiff. This had gradually increased. For four years he had been able to feel "rocks" in the knee joint and at times the joint locked for a minute or two during which interval he suffered excruciating pain. Except for the trouble with his knee he had always been well. The family history was negative. There was no history of tuberculosis.

Physical Examination.—A well developed man, 5 feet 11 inches in height, weighing 168 pounds, apparently in good health. Blood pressure 124/74. The examination was negative except for the right knee which was about twice the size of the left and slightly sensitive to pressure. On palpation, a "doughy" feeling was noted and hard irregular bodies were felt sliding back and forth beneath the fingers. These were both lateral and medial to the patella. Extension and flexion were restricted to about one half of normal. The left knee appeared normal.

Roentgen Ray.—The findings as interpreted by Dr. Paul F. Cole, radiologist, were as follows:

Right knee shows a large number of circular-like shadows surrounding the knee joint, more noticeable in the popliteal space, having a shadow density resembling bone. These bodies appear to be detached from the cortex on films examined in both the anterior-posterior and lateral positions but resemble in appearance osteochondroma. We see no definite evidence suggesting malignancy. Roentgen ray examination of left knee for comparison is negative for any evidence of similar pathological condition.

Operation.—The right knee joint was opened by mesial incision into the anterior compartment and a

very thick gelatinous fluid escaped with numerous white pearly hard bodies. With manipulation of the joint many pedunculated growths were exposed and removed. A dull curette was used to remove the remaining growths, many of which were in the recesses of the joint making their removal tedious. The posterior compartment of the joint was not opened when it was found that with removal of the bodies from the anterior compartment motion of the knee joint was free. Closure of the synovial sac was without drainage.

Pathological Examination.—The report by Dr. Murray C. Stone, pathologist, follows:

Gross specimen consists of 10 white, hard, nodular bodies varying from $2\frac{1}{2}$ to $1\frac{1}{2}$ cm. in longest diameter and about 50 smaller pieces similar in appearance ranging downward to 5 mm. in size, the whole bulk amounting to 30 c.c. The cut surface is bluish white, translucent and with small irregular opaque areas in which there is a little calcification. The main bulk of the tissue is evidently cartilaginous.

Microsection shows a thin outer zone of dense fibrous tissue which is forming cartilage. The cartilage cells are for the most part small but in places are larger, mature looking and thinly scattered in the hyaline matrix. Scattered through the cartilaginous tissue but nowhere reaching the surface are areas of calcification. No fat tissue or definite bony architecture is observed.

Postoperative Progress.—Healing was by primary intention. Passive motion was begun on the third day. The patient was discharged from the hospital on the eleventh day. Active motion and use of the leg was allowed after the third week.

Follow-Up Notes.—Examination three months after operation revealed the right knee to be of the same size as the left normal knee. Its motion was almost as free as that of the left. There had been no attacks of locking of the joint and no pain since the operation. A roentgenogram made at this time showed a few of the bodies remaining in the posterior compartment of the knee. These were apparently causing no trouble and their removal was not advised.



Fig. 1. Before operation showing multiple loose bodies in the knee joint.



Fig. 2. Bodies removed from the knee joint.



Fig. 3. Three months after operation. A few loose bodies remain in the posterior compartment of the knee.

SUMMARY

A case of osteochondromatosis of the knee joint is reported in which numerous loose and pedunculated bodies of varying size were removed by incision into the joint.

214 North Jefferson Avenue.

William P. Thompson, New York (*Journal A. M. A.*, March 4, 1933), presents a review of the twenty-one reported cases of primary tuberculosis of the pericardium and also analyzes seven cases of the disease that have come to necropsy at his hospital. He concludes that the twenty-eight cases of primary tuberculosis of the pericardium, including his seven, present a uniform and characteristic clinical picture. The following points are of considerable diagnostic importance and should force one to consider this diagnosis; the presence in (1) elderly individuals, of (2) cardiac failure, otherwise unexplained, which progresses relentlessly, without ever receding or responding to treatment, to a fatal termination within a few months, and is associated with (3) a persistent, unexplained fever.

EARLY CARDIAC STRAIN

ORVILLE HARRY BROWN, M.D.

PHOENIX, ARIZ.

The purpose of this paper is to suggest that the number of cardiac deaths and much minor illness may be substantially reduced by recognition and careful treatment of early cardiac strain.

For the last 20 years my attention has been drawn to hearts slightly embarrassed but without manifest disease. Certain observations have been made and certain conclusions drawn which if substantiated cannot but be of extreme importance. My attention was first attracted to the subject by a young man who complained that on Tuesdays and Thursdays, or perhaps Mondays and Fridays, he had definite pains in the cardiac region. I was at a loss to explain the pain. Finally, I thought to ask him what he did on those days different from on other days of the week. He was a baker; on those days he carried many heavy sacks of flour to the hopper. The conclusion, finally, was that this pain came from cardiac strain.

Neurocirculatory asthenia, soldier's heart, disordered heart action, cardiac strain, effort syndrome and tired heart are terms which have been used probably to indicate the condition I designate as early cardiac strain. There is nothing in the literature known to me which presents the subject as I see it.

White¹ in his new book on heart disease uses the general term of neurocirculatory asthenia. He says effort syndrome is a part of a neurasthenic state and that it has been particularly observed in soldiers under stress and excitement. He says the cause is unknown. Then, farther on, he writes: "Besides heredity the one other etiological factor of greatest importance is that of strain. This may be the result of worry over business, social or family troubles, of emotional conflicts, of physical or nervous fatigue or both (as in the war), of insomnia, of the exhaustion from acute infection or other illness or of under-nourishment." As symptoms and signs he speaks of dyspnea, precordial pain, palpitation, faintness, dizziness, tremor, sweating and nervousness, frequency of pulse and respiration. He has little to say about cardiac dilation.

Dr. Max Cloetta,² in an article dealing with the pharmacology of digitalis, recognizes cardiac dilation as a beginning of cardiac incompetency and recommends digitalis for it. He writes: "Contrary to the former conception, I now consider every heart with dilation and hypertrophy as in an abnormal state and of diminished efficiency."

Dr. Henry A. Christian,^{3, 4} writes at length upon chronic nonvalvular disease of the heart, dealing with advanced cardiac strain. He stresses hypertrophy rather than dilation. His idea seems to be presented in the following excerpts: "The hypertrophied heart has enlarged cavities and in this sense is dilated; hypertrophy and dilation accompany each other; dilation is present with hypertrophy, whether there is cardiac failure or not, but I doubt whether dilation is an important factor in heart failure." Again, he says: "There are experimental studies indicating that strain of not long duration may lead to subsequent hypertrophy and dilatation of the heart. Strain, combined with varying other factors, such as hypertension, infection, etc., may play an important role in etiology."

Regarding treatment he says: "Treatment for these patients is that for other forms of cardiac failure, with rest in bed, diet, digitalis, etc., in adequate dosage." In another place he says he is becoming more and more convinced of the importance of giving sufficient digitalis and before there are signs of decompensation.

The splendid works of Christian, Cloetta, and White describe, more or less, long standing serious conditions of the heart.

I wish to point out that preceding a serious state of the heart there is a condition nicely described by the title of this paper, "Early Cardiac Strain," which is recognizable by the identical signs and symptoms found in serious conditions, only being minimal, and that early cardiac strain exists in a considerable portion of our population. The subject will first be discussed from a theoretical standpoint and then from the practical.

THEORETICAL CONSIDERATION

The heart is a chambered, muscular, spherical organ which contracts about a fluid. Muscular tissue is elastic. Every medical student of the last 25 years did the experiment of hanging a weight to the muscle of a nerve muscle preparation and keeping the muscle regularly contracting with a lever indicating on a kymograph the length of the muscle. As the muscle became fatigued it stretched. Fatigue must have a similar influence upon heart muscle. The stretching of heart muscle produces cardiac dilation. Therefore, a tired heart is a dilated and strained heart. The recognition of a slightly dilated heart may be difficult. In the first place, it is not known just how large any certain heart should be; the size of the heart is an individual matter; the lateral margins of the heart have lung between them and the chest wall and are a considerable distance from the chest wall,

and in many persons the thickness of the chest wall greatly increases the difficulty.

Nature has wisely given the heart a wide margin of reserve. It keeps on even with extreme fatigue. A firm fibrous sac, the pericardium, helps to prevent sudden extreme dilations. The pericardial sac however must gradually stretch as the heart dilates and once stretched probably never returns to normal size.

The coronary vessels, being on the heart's exterior, elongate as the heart dilates. The elongation of a blood vessel causes a narrowing of its lumen. Relatively little elongation produces a considerable reduction in cross-sectional area. The dilated heart as a result has a poor blood supply. This results in a vicious circle which would certainly be speedily fatal in many cases were it not for the wonderful cardiac reserve.

A dilated heart with a poor blood supply and an enlarged pericardium though continuing dilated may develop a certain amount of compensation. The blood vessels likely indent themselves into the cardium, straighten out a bit, and probably widen a trifle. Even though a dilated heart could be so compensated that it would be doing practically normal work it must do better work when contracted to normal size. It is important that cardiac dilation be not allowed to persist as the effects can only be deleterious with the possibility of ultimate fatal termination.

Hypertrophy is a part of the compensation. I know of no method to diagnose slight hypertrophy. An enlarged heart is frequently if not usually spoken of as hypertrophied. Unquestionably, such a statement is usually erroneous or at least emphasizes the physiologic rather than the pathologic process. A heart enlarged not more than 1 cm. in its width can scarcely be definitely proved as being enlarged. A 1 cm. hypertrophy is a considerable hypertrophy. The experimental error in examining heart size is certainly as much as one centimeter. Therefore, a heart found enlarged may safely be regarded as a dilated heart though it may also be hypertrophied.

The symptoms of dilation must extend from none to those of cardiac failure. As a rule they will be present at first only during periods of excess strain. The symptoms will be the same as in severe cardiac exhaustion varying only in degree. They are pain, sensations of fulness or stretching within the left lower or middle chest, dyspnea, cyanosis, edema, too frequent pulse and respiration, palpitation and irregularities. If slight cardiac strain exists only slight symptoms should exist, and these probably will not have been observed until the physician calls attention to them. The heart is overtaxed periodically and therefore the symptoms should in the

primary stage be periodic. Obviously, this is the ideal time in which cardiac strain should be diagnosed.

The pain ordinarily will not be serious nor constant. Most often it will be absent, slight or a mere soreness. It is due probably to the tension and stretching of the tissues. The sensation of fulness or stretching would be expected because of the tension placed upon the pericardium, the pressure of the heart within it, the pressure against the diaphragm and chest wall, and general crowding of surrounding tissues and possibly pulling pleural adhesions.

The dyspnea would not be expected to be observed by the patient except in periods of overexertion; and even then he might not realize that he was dyspneic because he had gotten accustomed to it gradually, perhaps for a long time. Edema would be expected to be manifest at first only at such times as the heart was put to prolonged overdoing. It may become chronic. The increase of pulse and respiration rate may be from none to a considerable amount. Palpitation is a fairly common complaint and it seems that a stretching of the neuromuscular conducting tissue might be the causative factor. Irregularities probably also result at times from the same factor and are frequently noted by patients; marked irregularities usually mean more than an early cardiac strain.

It would seem that any age might be affected—one about as much as another since youth has much energy, little judgment and much “come back,” while the aged have less energy, more judgment and less “come back.”

The strenuous American life from early childhood to almost or quite advanced years must have its characteristic American heart. Our tendency to make a fetish of athletics in school days and of business thereafter gives us a supremely strenuous life. It cannot help but have a baleful influence upon the heart. It would seem then that cardiac strain must be nearly universal in America and practically a normal state for most of us. With this course of reasoning the wonder really is that there are not more cardiac deaths among us.

Every person whom a doctor contacts for any sort of an examination should have his heart carefully examined; when the least suspicion of cardiac strain is suspected the patient should be cautioned to slow down and to report periodically for observation and he should be given such advice and treatment as may be indicated.

PRACTICAL OBSERVATIONS

Incidence of mild cardiac strain is extremely high. I have not attempted to compile statistics.

Both sexes are affected. No age, except probably in prepuberty, has any grade of immunity to it. Probably the fourth decade is the period in which it is most likely to exist. Around the ages of 40 to 50 men are beginning to feel the necessity of going under high pressure to establish themselves in their businesses or professions. Then is when they should be slowing up but instead they crowd on more “steam.” There is the psychic factor also of being a bit afraid of showing age.

The cause of cardiac strain, in the absence of cardiac disease, is, taxing the heart beyond what it has been trained to do. A toxemia may co-exist. Ordinarily a person overexerts, strains his heart temporarily, and then continues his usual activities without sufficient rest periods intervening for the heart to regain a normal condition. Soon, another overtaxing of the heart occurs. Thus it may go indefinitely. No two cases are alike. One may keep his heart strained continually; another may do it periodically until it becomes chronic.

An illustrative case is a man aged about 40. He had an indefinite group of symptoms which will be discussed under the paragraph on symptoms. He only recalled after I explained his trouble to him that it dated from his having dug a cellar under his house three years before. He had not been accustomed to manual labor; the cellar was dug out of nearly solid rock; therefore the work was exceptionally taxing upon him.

Another case is a schoolgirl of 13, the symptoms to be mentioned later, who was put precipitately into high school athletics, basket ball and track, because she had the desired size.

Many such cases could be detailed. Any physician can select dozens of such instances from his practice in a few days by a careful survey. High school and college athletics seem to be particularly pernicious in causing cardiac strain.

The diagnosis of early cardiac strain is made upon certain symptoms and signs. The symptoms are usually slight. Often, the patient will deny symptoms until he has been carefully interrogated and perhaps even had time to reflect upon the questions. Slight dyspnea on exertion is probably the common symptom and may have existed so long that it has seemed to be a normal state. Most patients have observed a periodic sensation of fulness or stretching in the heart area, often with pains or soreness. Occasionally a patient will have observed swelling of his ankles. A fair percentage of cases have had palpitation. In addition, there may be an indefinite group of symptoms which are the result of poor circulation. In many per-

sons there is a tendency for the extremities to go to "sleep."

The man* mentioned in a preceding paragraph had marked dyspnea on exertion and asthmatic bronchitis, a sensation of fullness in the cardiac area, marked cyanosis and easily demonstrable edema over the tibia. The second case mentioned had observed little except that she felt as though she could not get her breath more than halfway down her bronchi, and was decidedly dyspneic on exertion; she had a hacking cough.

The signs of strain are definite and easily recognized when carefully sought. The important signs are, enlarged heart, cyanosis, edema, occasionally enlargement of the liver, and irregularities.

Edema is discoverable by firm pressure for perhaps five seconds with the tip of a finger or thumb on the skin directly over a flat portion of the lower end of the tibia. It may exist only after or during periods of special stress.

Cyanosis, when one learns to judge it, is of the greatest value and accuracy in measuring and indicating cardiac strain. The lips and nails should be examined closely for it. Obviously, pulmonary disease may produce cyanosis with a perfectly normal heart. Each person has his own normal color and it is only by repeated examinations of the nails and lips day after day, especially after rest and other treatment, that his normal color will be determined.

Many of the patients have themselves observed that their hearts palpitate and have irregularities. Occasionally a heaving cardiac pulsation will be detected on examination. Siniple nervousness may produce heavy beating but a physician should be slow to blame nervousness solely.

The diagnosis of a dilated heart is made by the usual methods of physical examination: Inspection, palpation, auscultation and percussion. The left margin may be determined by locating the apex beat when it can be seen or felt. It is important to have the light strike the chest at an angle to make the best shadows for inspection.

Auscultation is probably the most useful and reliable procedure for the average person to use in locating the lateral limits of the heart. The bell of the stethoscope should be placed upon the chest, well outside the heart area, and repeatedly moved inward a short distance listening each time at the intensity of the sound. The place where the sounds first become definitely

audible and are not much louder at any point is usually directly over the edge of the heart. Experience gives one assurance in this method of mapping heart size.

Percussion is of great value if done by extremely light percussion, preferably by the index finger, and done perpendicular to the table on which the patient is lying flat rather than perpendicular to the chest wall. By percussing perpendicular to the chest the heart would be made to seem larger than it actually is, provided the percussion is done sufficiently lightly. If the percussion is heavy the heart will usually appear smaller than it actually is. That the direction in which the stroke is delivered to the chest makes a marked difference may be shown by percussing a rolled back of a church pew or similar structure. Place the pleximeter finger in a position and deliver the blows upon it in one direction and then another and it will be seen that when the blow is delivered in the direction of the back of the seat, even though the position of the pleximeter finger has not been changed, there will be a subduing and an increased pitch of the percussion note. One will get the most out of percussion by listening for loudness rather than only for changes in pitch. It is important that the intensity of the blows be always the same.

The findings by percussion should be carefully checked against those by auscultation, inspection and palpation. One must feel sure of the harmony of the finding of all the examinations before being satisfied. An error, when made, will commonly be in mistaking a dilated heart for a normal heart rather than thinking a heart is dilated when it is not.

When the symptoms indicate cardiac strain even though dilation cannot be proved the condition should be treated just as though dilation was proved. It must be kept in mind that slight dilation is difficult to prove or disprove, even in thin-chested individuals, and doubly so in heavy-chested persons, especially in women with large breasts; also, the heart may be dilated evenly in all directions and the testing is only for widening laterally and vertically; the anteroposterior dimension cannot be measured by physical examination.

There is no size that can be said absolutely to be the correct measurements for any certain heart. One's fist is probably the best standard by which to compare and estimate the size of the heart. White¹ says the transverse diameter of the heart checked by the orthodiagram in the adult averages 12.0 cm.—9.5 to 14.5. He says it is often best to discard all standard measurements and to rely on judgment for each individual.

*This was not strictly a case of early cardiac strain from the standpoint of duration of condition and symptoms; but from the results of treatment and the ease with which his true condition could be overlooked this was an early case. A part of the symptoms were increased by his asthma.

The therapeutic test, as I term it, for the size of the heart is reliable and should be frequently used. If a heart suspected of being dilated is given appropriate treatment, the symptoms disappear, the size of the heart diminishes and the well-being of the patient is improved to a maximum; the new size may be taken safely as normal for that person.

The first case previously referred to was a man weighing about 140 pounds and the left margin of his heart was about 13 cm. from the midline, the right about 6 cm. He had definite edema and cyanosis. The second case, a girl of 13 weighing 120 pounds, had a left margin 10 cm. to the left of the midline with the right in normal position. She had slight but definite edema and moderate cyanosis.

The treatment of early cardiac strain is rest, or rest and digitalis. Rest may be merely lessened exercise. The results may be almost precipitate or they may be slow. In either event the patient should be carefully watched for months and often for years. He also should be educated to afford his heart more rest probably throughout life, and realize when he is submitting his heart to more than ordinary work. Every period of excessive work should be followed by a period of more than usual rest.

The first case already mentioned had strict bed rest for about three weeks, with digitalis and appropriate treatment for the asthma, cough, etc. He made splendid improvement, not however, without backsets and discouragements. He was instructed carefully about the importance of more hours of bed rest, fewer hours of work, the need of taking all physical exertion slowly, just how he must take digitalis and that he must consult his physician regularly.

The second case was given digitalis, the school authorities were asked to excuse her from athletics and a slight cough was given appropriate treatment. She was seen frequently for a time and is still being seen, at gradually lengthening intervals. She is doing splendidly and is gradually increasing her activities.

Digitalis is the remedy on which we must rely as a therapeutic agent. Absolute bed rest is often advisable except for the reason that it is easy to make a person hypochondriacal about his heart. Digitalis in most cases will usually accomplish the desired results with a reduction of physical exertion. Digitalis may be administered any way the physician happens to fancy provided only that enough is given; most cases will need to be nearly digitalized. The preparation of choice is the tablet or capsule form. I am convinced the tinctures are inferior in keeping qualities to the solid forms. Two tablets,

equivalent to 30 m. (2 c.c.) of a tincture, given three times daily after meals is a most satisfactory procedure. It can be withdrawn at the first indication of digitalization or when the heart has returned to normal size and the signs and symptoms have disappeared, or it may and should be continued in smaller doses to hold the good done by the larger doses. Certain patients have prejudices against and, rarely, sensitization to large doses of digitalis. In early cardiac strain there is not the urgency that there is in cardiac failure for rapid digitalization. All signs and symptoms, dyspnea, edema, cyanosis, the position of the apex beat, the irregularities, etc., are carefully watched in order to judge of the patient's needs. The patients usually soon learn to anticipate their needs by studying their coming activities.

Explaining the condition to the patient is the most serious matter of all. I have had the experience of explaining the condition of an early cardiac strain to two patients using almost the identical words for one as for the other. One person went his way and told his friends that I had said he had nothing wrong with him and the other told his family that I had said he was in danger of dying suddenly in the near future. It will require all the tact and care that a physician has to properly explain the conditions to his patients. Explain it he must; the good the patients get from the treatment will be directly proportional to their understanding of the problems connected therewith. I like to tell them that if a pulse which has a rate of 120 per minute can be slowed by rest and digitalis to 70 per minute, 50 beats per minute are saved. It is easy to figure that 72,000 contractions of the heart are thus saved every 24 hours. This is usually an exaggeration, but it is dealing with figures that are easy of comprehension by the average person.

A problem which often has to be met is with the man who returns to you, after you have made a diagnosis of early cardiac strain, and tells you that doctor "So and So" gave his heart a careful examination and that he has not a thing wrong with his heart. In answer to this it is usually convincing to demonstrate cyanosis and edema. Be certain that you have neither and then make a comparison of your condition and his.

INFERENCE

Early cardiac strain if recognized early and appropriately treated and the patients properly educated thereon, will greatly reduce the number of cardiac deaths, lengthen life and mitigate suffering.

CONCLUSIONS

1. Early cardiac strain is an important reality.
2. Every patient examined for any cause should be examined for cardiac strain.
3. It is recognizable by the symptoms: Dyspnea on exertion, cyanosis, edema, palpitation and irregularities, all of which have to be inquired into carefully in order to get the history of them; and by the signs: Dilated heart, cyanosis, edema and enlarged liver.
4. Cardiac dilation may be recognized, if carefully examined for, by palpation, inspection, auscultation and percussion. The findings of each method should be checked against the findings of each of the other methods.
5. Percussion must be extremely light, preferably with the index finger.
6. If there is edema, cyanosis, rapid pulse and dyspnea, give treatment and expect improvement even though it cannot be proved that the heart is even slightly dilated.
7. It is most important that the person be informed of cardiac strain and in a way to impress upon him the necessity of giving thought to it but not to cause him undue worry.

711 Professional Building.

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- N. B. Since the completion of this paper another article by Dr. Henry A. Christian, entitled "Chronic Myocardial Insufficiency and Its Therapeutic Management," has appeared (*Annals of Internal Medicine* **5**:95, 1931). I indorse every statement of Dr. Christian. If I understand him fully he is discussing later stages of what I term "early cardiac strain."

CORONARY OCCLUSION AND FATAL ANGINA PECTORIS

Greene Fitzhugh and Burton E. Hamilton, Boston (*Journal A. M. A.*, Feb. 18, 1933), selected, from their private consulting practice, a group of patients within a whole series classifiable under coronary disease associated with angina pectoris; namely, patients otherwise without disability who have angina pectoris on exertion or excitement but are able to carry on without angina while adhering to a reasonable regimen. They found that such patients, when they die, usually die in angina or following a coronary occlusion. More often than not, such fatal anginas or coronary occlusions were immediately preceded by unusual departure from ordinary habits of living, and these departures were usually preventable. The authors analyze the events that constituted departures from ordinary habits of living and that preceded coronary occlusions or fatal angina in their series of 100 selected cases. This analysis furnishes material for improved regimens which should be useful in avoiding or postponing coronary occlusion and fatal angina.

A SUSPENSION-TRACTION FRAME FOR INJURIES TO THE FOREARM AND LOWER ARM

EDWARD P. HELLER, M.D.

KANSAS CITY, MO.

The frame illustrated herewith has proved of inestimable value in a group of cases which ordinarily cause considerable trouble. It was made under my direction to obtain adequate care for a young man who had fractures of both bones of the forearm in the middle third, badly lacerated soft parts and a hematoma of the lower half of the arm. The abrasions and lacerations of the arm, forearm and elbow precluded any handling of the parts for reduction of the fractures by the usual methods. Accordingly, a Kirschner rustless wire was run through the olecranon under aseptic precautions and the wrist and hand were enveloped in a felt-gauze glove held firmly to the skin with mastisol

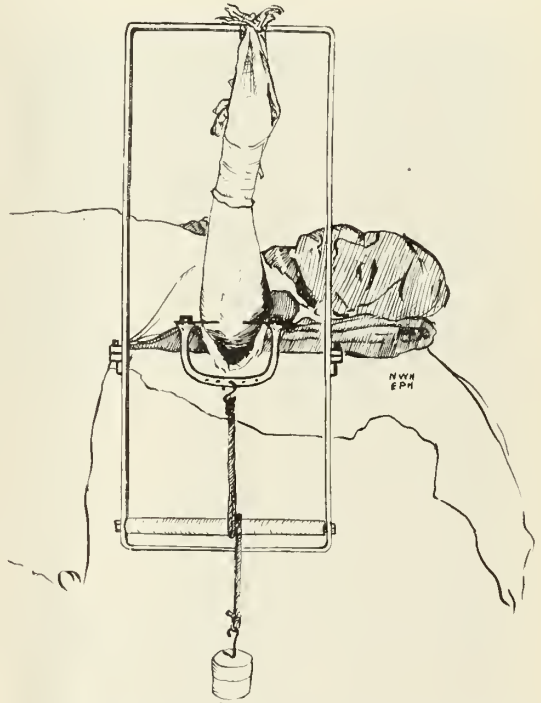


Fig. 1. Author's frame as used on first case mentioned in text. Note wide space on all sides of forearm for dressing open wounds in compound fracture, or injection of fracture hematoma with procaine prior to manipulation or the application of plaster cast. Hand and wrist are first padded lightly with felt glued to the skin with mastisol; then a long piece of muslin is laid on the ulnar and another on the radial side of the hand, these being held firmly with more mastisol and a few circular turns of ordinary bandage. Ends of muslin are tied over the upper horizontal portion of the frame with the pull exerted on the radial or the ulnar side depending on the type of fracture. The weight rope passing over the roller at the lower portion of the vertical section gives stability. Weights may be varied according to need for greater or less traction.

From the Fracture Service of the Kansas City General Hospital.

(Böhler). The forearm was suspended from the upper transverse portion of the frame as shown in figure 1. A traction bow was fastened onto the Kirschner pin and a rope and weight attached. By this means the entire extremity from wrist to axilla was left free for dressing and the fractures were kept from great deformity through muscle contracture.

Following the use of the frame in this case a number of oblique fractures of both bones of the forearm were treated in a similar manner with one exception, that skeletal traction was not usually necessary. Instead, a felt cuff was placed upon the upper arm at the bend of the elbow and muslin passed about it and spliced to the weight rope. A very unusual and highly desirable feature of this frame is the fact that once placed in it, the patient is comfortable, does not have to be disturbed for roentgen ray, may be rolled up beside the vertical or portable fluoroscope, may be lifted from bed to cast table



Fig. 2. Patient with oblique fractures of radius and ulna at the junction of middle and lower thirds of the forearm. He was transferred in the frame from bed to cast table, with the flat or horizontal section of the frame extending from neck to buttocks, acting as an effective litter. Procaine 2 per cent was used to anesthetize the fracture hematoma and under portable fluoroscopic guidance the fractures were manipulated into favorable position prior to casting. The brick was removed during the manipulation and the rope used as a stirrup to regulate, by foot pressure, the amount of traction. Note the sliding joints at the junction of vertical and horizontal portions which make any necessary alteration of position possible. The entire frame is made of $\frac{3}{4}$ inch by 1 inch band iron, and can be constructed by any machinist. After the plaster has dried the muslin attachments are cut loose and the patient returned to the ward in a wheel chair.

on the horizontal section of the frame, and may be casted with or without manipulation and without disturbing the relation of the extremity to the frame.

Local anesthesia has been used when twenty-four to forty-eight hours of simple traction in the frame has not resulted in complete reduction, and adequate painless manipulation is usually possible. By means of sufficient weight most fractures may be prevented from overriding, especially if the patient is placed in the frame on admission as has been our custom. In oblique fracture excellent results follow casting with the extension at its maximum, provided bony contact is present. Where local anesthesia is not successful due to thick musculature or lack of cooperation there is no objection to general anesthesia, and the patient is in a most favorable position for such procedure.

Admitting the success of Böhler's routine in proper hands, we feel that we have devised a method of reduction of fracture of both bones of the forearm which is just as effective and which permits the inclusion of cases for primary extension and traction which have hitherto had to await healing of the soft parts at the expense of the fractures.

Needless to say, all the usual preparations for plaster casting of an extremity are used. The set screws at the junction of the vertical and horizontal sections of the frame permit a good range of pronation and supination of the hand where necessary to align fragments. While we have not as yet done so, we feel that if open reduction were needed in a case suspended in this frame, we should have routine preparation of the skin made, and by draping the metal parts proceed to operate at a distinct mechanical advantage.

We are also fully aware that cases of extensive burns of the forearm and elbow and cases of cellulitis requiring exposure on all sides for dressing might well be handled in this frame. Where necessary, too, Kirschner wires passed through one or more of the metacarpals would allow exposure of the whole hand for dressing while suspended from a traction bow attached to the upper horizontal. Multiple or compound fractures of metacarpals or carpals could be adequately treated by skeletal suspension in this type of frame prior to casting, manipulation or operation.

1010 Professional Building.

Fremont A. Chandler, Chicago (Journal A. M. A., July 8, 1933), treated two cases of pneumococcal infection of the sacro-iliac joint complicating pregnancy by radical resection of the ilium. One resulted in a complete cure one year after operation; there is satisfactory progress to date in the other case.

IDEALISM IN MEDICINE AND SURGERY

FRED W. BAILEY, M.D.

ST. LOUIS

In appearing before you with a rather academic discussion of medical ideals, I am not unmindful of the fact that I am addressing many physicians who are well versed in the art of teaching as well as in practicing scientific medicine. I have scant hope of radiating any additional light in this seat of learning, yet I firmly believe that under the influence of custom or environment we sometimes permit our medical ideals to languish. Idealism is defined as the effort to realize the highest type of any natural object, or the pursuit of a mental conception regarded as the standard of perfection.

Some physicians practice medicine as though they stood aloof upon a mountain top, enjoying the vista of crags and domes and chasms alone in their grandeur; others less ambitious are content to emulate the mountain stream that in its reckless abandon forgets that it exists only by virtue of the melting snow, the hidden spring and the law of gravity. Either group would scarcely be happy in the peaceful valley where the quiet lake, its shores shaded by giant trees, has calmed the noisy mountain stream; nor could they truly understand the doctor who sees the rarest beauty in the valley view. How often, in acquiring an alluring objective, do we find that the light which has attracted us is a reflected one. Fame is frequently the antithesis of true happiness; commercial success is seldom acquired without the sacrifice of many things that money will not purchase. Must we hope to emblazon the pages of medical history with heroic deeds and thrilling discoveries ere we can be credited with rendering our full duty to posterity? No, not if we are to be measured by the yardstick of service. It is estimated that not one physician in ten thousand rises so far above his fellows that the trend of medical thought is changed by his professional attainments.

If we would search for "ideals" we could not in justice limit our study to the most brilliant scholars, who may perchance have scratched the surface of our future knowledge, but we must also give heed to the thousands of humble, poorly trained yet earnest students of bedside pathology and lamplight diagnosis. "For indeed it is one of the lessons of the history of science that each age steps on the shoulders of the ages which have gone before. The value of each age is not its own but is in part, a large

part, a debt to its forerunners, and this age of ours if like its predecessors it can boast of something of which it is proud—would, could it read the future, doubtless find much also of which it would be ashamed." Thus wrote Sir Michael Foster many years ago. Is this not also true of the individual? Are we not prone to forget that the steps by which we have risen were builded by the ingenuity of ages past? Our successes and accomplishments are accepted by us as tribute to our own initiative and endeavor, but failure is to us the ill begotten son of extraneous force and environment.

A brief excursion into the ancient history of the human race is an excellent gyroscope for righting and balancing our ego. There we will relearn that it has ever been the tendency of man to stray from a trusting belief in the natural laws which not only should guide our steps but which also control the universe. We may forget or ignore those laws and wander from the path of clear thinking, but they continue to operate and serve until penitently we return to acknowledge their permanency. The fabric of modern medical knowledge was not born of a gazing crystal. It has been slowly and laboriously woven since the beginning of human history.

The inherent urge for self-preservation is the dominating characteristic of every living thing. The same element of natural law which causes the flower in the field to turn its face constantly toward the sun, urges man to surround himself with all the necessities of self-preservation. Out of each succeeding age since history has been recorded there sprang a few who possessed the belief that they could best preserve themselves by conserving the health and lives of the masses. Of the earliest of these pioneers we have but scant record. Throughout the Stone age, recorded as 7000 to 2000 B. C., on through the Sumarian, Egyptian, Bronze and Iron ages, and the Greco-Roman, Jewish and Mohammedan periods, the development of physical aid was under the domination of those who believed that disease and death were visitations from a wrathful spirit or supernatural agency and that they could be overcome only by mystic and magic processes. Thus the priest and prophet were not only the intercessors but also the medical men of earliest times.

Little or no progress is noted until, like a brilliant flame in the scientific heavens, the once virile, gifted, cultured Greek race brought forth a mythical god of medicine, Aesculapius, son of Apollo, the god of healing. From the influence of this phantom ideal emerged the first sane constructive effort to classify and remedy human ills. Rude though they were, through their

agency the medicine man, priest, prophet, physician and philosopher, were elevated to a place of honor and respect which reached its zenith in Hippocrates, 460 B. C., nearly one hundred generations ago. Within the ninety years of his life medical thought and knowledge received their first great impetus.

A careful review of the accomplishments of this more than human mind should deflate the conceit of the most scientific students of this day. May I summarize them briefly: He was the first to group and coordinate symptoms by bedside study; by his humoral pathology he laid the foundation for serodiagnosis and therapy; he described diseases of the liver, the three forms of remittent fever, epilepsy, puerperal septicemia, phthisis, anthrax, paraplegia, influenzal fever and many additional fundamentals of our present day armamentarium. He was the first great internist. His physical examinations would please and satisfy the modern clinician. His books on fractures, dislocations and wounds, and epidemic diseases incorporate many of the principles adopted by our latest textbooks. He first described infection, and healing by first and second intention. His therapy was directed toward assisting not overruling nature and he fought with fervor the superstitious idea that human ills were wrathful visitations of a god or demon. In fact, this first great superman of science so changed the trend of medical knowledge into paths which we still delight to stroll that, as though nature had exhausted her force, a long period of stagnation and inaction in surgical and medical progress followed his passing.

In the following century Aristotle, the botanist, anatomist and physiologist, inaugurated the first study of comparative anatomy by dissection.

Three centuries later was born the great Galen, a close and versatile rival of Hippocrates for ancient honors. He set an enviable goal in systematic theory, recorded in writing. Nine books on anatomy, seventeen on physiology, six on pathology and thirty on pharmacy were only a part of his contributions. As human dissection was undreamed of the errors in his works may be charged to comparative anatomy and physiology, yet his knowledge of and contributions to neurology, physiology, anatomy, pathology and therapeutics would in principle compare most favorably with modern thought. For over thirteen centuries after his death there was more recession than growth in medical knowledge.

During the medieval period no master mind appeared; but society began to assume the responsibility of caring for the sick and medical

schools and hospitals were provided. To combat the crude and ignorant barber surgeon and the mountebank, reprisals of death were executed upon surgeons and herb givers whose ministrations ended fatally. Medical jurisprudence was invoked and in 1224 Frederick II established the first law demanding license by examination. To quote: "The candidate must have studied logic for three years, medicine and surgery for five years and have practiced for one year under some experienced physician."

From the years 1100 to 1494, forty-one medieval universities were established with departments of medicine and surgery. With the Renaissance came a relighting of the vivid fire of Hippocrates, Aristotle and Galen, and the period from 1450 to 1600 gave us Leonardo da Vinci, the artist, who with Vesalius, the master anatomist, made of crude anatomy an attractive science and study. As medical practice became more popular and remunerative, charity clinics were established, hospitals vastly improved and quackery flourished.

The seventeenth century brought Harvey, who first directed our circulation through normal channels; Kircher, the first to study disease by microscope; human dissection was popularized, *materia medica* standardized and the barber surgeon ostracized. In 1679 the title "Doctor" was first applied to the graduate, to distinguish him from the charlatan, mountebank and midwife.

Probably the greatest product of the eighteenth century was John Hunter, a raw untutored Scot whose spark of genius, though often endangered by an irascible temper, stamped him as a modern Hippocrates. His pupil Jenner did not need his reflected glory to establish his fame as an observing scientist. In the latter part of this century we greet the appearance of the first of a long line of renowned English and American doctors, with whose fame and accomplishments we are all proudly familiar.

To select and emphasize any group of our modern medical luminaries may seem an unfair gesture, yet we hesitate to ignore our Pasteur, Lister, Beaumont, Koch, McDowell, Sims, Darwin, Virchow, Simpson, Long, Osler, Reed, Kocher, Murphy, and many others who are still in the field of activity. What ideals could justify the punishment I have inflicted by this wearisome review of the highlights and the apostles of our craft? Almost without exception, these and many unnamed luminaries were of humble breed and birth. They represent more vividly than one can express the indestructible spirit of science which has existed since the beginning of time, and has grown with

the ages through the medium of self-determination from a spark of lowly effort to an unquenchable flame of victory. May we not, even in this day of ultrascientific acumen, gracefully gather ideals from the shades of Hippocrates and his Oath? From the famous, fearless surgeons of yesterday and the quiet self-effacing Pasteur, Reed, Beaumont and Lister? Does not the example of this long train of noble souls, urged not by avarice but by the highest of all human attributes—the desire to serve—spur on to greater endeavor the student of today?

The ideals of medicine and surgery may not be found in the vaults of the rich, nor in the coffers of the commercial, nor in the hearts of the jealous, the acrimonious and the subtle. They are rather to be found in the daily life and living example of the physician, whether he be the humble, struggling, uncouth, crossroads doctor or the eminent specialist on the mountain top of success, who has garnered from his life of labor the jewels of charity and unselfish service to his fellowmen.

Success in medicine is not fairly measured by our standing in the community, nor by the style of cars in our garage. The bravest acts of war have been unseen and unrewarded by man. In the distant but vivid memory of my own father, I can now visualize the country doctor who sits by the bedside of his stricken, penniless patient, and fights for him with all the power of his training. His light may be dim, his station humble, his reward meager, but I wonder perhaps if he is not much nearer the gates of idealism than the clever specialist who with the grace and ease of long experience and opportunity, performs the life-saving operation or discovers a hidden pathology. There should be no looking up nor down in the society of service. The ideals of medicine and surgery are on one plane, clear to the vision and amenable to all who are equipped to work out the problems of a truly noble profession.

The making of a physician is in this day a gigantic job. There could be no excuse for requiring from eight to ten years of didactic and practical teaching with the expenditure of a staggering sum, merely for the purpose of equipping a lad for the practice of medicine were there not an incentive that cannot be measured in money and power. Much less may we hope for in the future if the trend toward state medicine is not checked. The adoption of this calamitous tendency in its entirety would necessitate a complete revolution in our present system. It would require half of a lifetime in the practice of state medicine, as visualized at present, for the ordinary graduate to work out the cost of his schooling. It would remove that

spark of determined ambition to excel which has motivated all whose names emblazon our roll of honor. It would stunt and stifle humanitarian instincts and change a labor of love and all the finer instincts that govern the true physician, to the level of the tradesman and the laborer whose chief ambition is to commercialize his talent or his muscle. This is not to be interpreted as a disparagement of the full time man, the teacher or of any medical toiler who chooses thus to serve himself and humanity. Over twenty years of intimate contact with student bodies as a teacher has given me, if possible, a firmer belief in modern medical education and a deeper respect for the full time teacher whose sacrificial service is the bulwark of our teaching institutions, but I must as strongly condemn the tendency of many state and private schools, to lose so completely their perspective of justice to the struggling practitioner whom they have graduated and sent out to serve his community. Free clinics are a precious boon to the poor, but they pauperize the man in the middle class who could and should pay a reasonable charge to his family doctor. There must be and is some fairer way of securing clinical material for teaching purposes than by passively or actively coercing it from the local doctor, whose school has sponsored him and is morally responsible for him. During this trying period of economic strain, the suffering among the largest of our professional groups, the local doctor, is serious and acute. The general economic distress has driven many of his pay patients to a free clinic service; with wounded pride and depleted income he struggles on, giving of himself, with scant return. Let us not permit him to lose all faith in the ideals we strive to establish.

Our ideals must never fall short of perfection. Had our immediate predecessors been content to rest in reflected glory, as were those who followed Hippocrates and for several centuries made attempt to build on the foundation he had established, we should still be woefully short of our present standard.

When Andrew McAlester, that sturdy oak of the Missouri Valley, began his career as a country doctor, his equipment a horse, a saddle-bag and a stout heart, did he turn idly with the current along with the flotsam and jetsam of pitifully unprepared talent, and float with them into the broad Mississippi and on into oblivion? No, he turned his head upstream, and against the flood of haphazard backwoods problems he flung himself with irresistible energy, fighting every whirlpool and hidden rock until fifty years of tolerant toil for a principle, an ideal, brought to him as he fell, a victor. "Well done,

thou good and faithful servant." If I may be permitted to pay late tribute to his memory, I would wish it to be not only the high regard and respect of every doctor in the Missouri Valley, but even more emphatically the grateful praises of every citizen therein; for none of our clan has ever moved more irresistibly forward against heavy odds, through pioneer years of practice, than did he. No one man ever stood more stanchly for medical progress, education and pure ethical principles; he possessed to a superlative degree a mind attuned to the future, and into the character of every student he instilled that nectar, without which success is an illusive phantom, the will to serve.

Idealism in medicine and surgery would be incomplete without at least a passing reference to the battle ground that lies ahead. Our objective is sighted and our forces are alert and anxious to attack, but the few redoubts that still obstruct our battalions are difficult to overcome.

In medicine, we envision a more definite and dependable control of metabolic imbalance, the early detection and restraint of degenerative brain and cord lesions. We would wish that all blood infections and anemias might respond; that earlier diagnosis of hidden malignant primary lesions might be possible; that the faltering heart and disintegrating kidney could be rejuvenated; that tuberculosis could be placed under the kindly hand of preventive therapy.

In surgery, we would select as our gift of gifts a truly safe and scientific control of thyroid disease; a 10 per cent cure for brain tumors; the power to prevent the fatal embolism; to diagnose early and cure, without disabling and heroic excision, all stomach lesions; to be given the opportunity to operate early in acute abdominal disasters; to be able to relegate to the past all peritoneal adhesions with their satellites, morbidity and obstruction; that all patients with late cancer of the rectum might prefer our competitors; that with the aid of the neurologist we might succeed in curing poliomyelitis and all degenerative circulatory diseases. Well do we know that the glamour of heroic surgery is all too often harshly subdued by the tragedy of failure, no doubt the result of a minor error which the future will prove preventable. Only a comparatively few on our shopping list are here enumerated. There are still many problems of great moment to solve. Probably all humanity would welcome more than any of those mentioned the cause and cure or prevention of cancer. It will come. It would be difficult to believe that man or beast, plant or flower, or any living thing should be

subjected by the maker of natural laws to attack by a destructive force for which there does not exist, somewhere, sometime a remedy. Therefore, we, while we stand, and our children when we fall, must fight on and on to successful issue, all enemies that menace our safety. All great discoveries and scientific advances may not be the children of profound reasoning, yet Galileo, Marconi, Harvey, Darwin, Pasteur, Edison, and hosts of others of equal brilliance, could not have reached their heights of intellectual and scientific development had they not possessed in a superlative degree the power of sound reasoning, thoughtful interpretation, persistent application and an abiding faith. Great discoveries which have seemingly been snatched from oblivion by accident would have still been sealed in that fathomless void of unknown truths had not the power to interpret been granted the discoverer.

Millions of eyes had witnessed the effect of the law of gravity before Newton plucked the great truth from a falling apple. The same natural laws that have existed since the world began are still unchanged and in constant operation. The potential fundamentals of radio existed in the time of Plato and Demosthenes; sepsis and life-saving surgery were possible before the period of Lister and Pasteur, and as greatly needed as now.

Let our minds revert to the preanesthetic period and recount the notable achievements and so-called discoveries that have lightened the burden of the human race since this, the enemy of pain, was presented to us by Simpson and Long. Consider also the advancement of scientific medicine and surgery within the last ten years and then dare to wonder what equally thrilling and hopeful accomplishments are even now awaiting recognition. If a long and arduous life of constant service to your fellowmen has accompanied you to the sunset of professional activity, and you have felt at times the stress and hurt of undeserved ingratitude and meager financial return, your life work has not been in vain, for deep down within one knows that real success can be measured only by the good we have done and not by the return we receive for that service.

Finally, I repeat the admonition and entreaty, that as physicians we accept our responsibility to the calling of our choice, and that we arm ourselves with incentive, ambition and determination to respond to the challenge of an unfinished work, gird ourselves with the armor of high ideals and, imbued by the patiently hopeful spirit of our professional ancestors—carry on.

"WHITHER ARE WE DRIFTING"

CARROLL P. HUNGATE, M.D.

KANSAS CITY, MO.

During the last few years state medicine, the panel system and health insurance have been brought forcibly to the attention of the laity and the medical profession through the press and medical periodicals. The future of medicine is a topic of conversation among medical men and the subject of many addresses delivered before county, state and national medical societies.

By most physicians, the true meaning of state medicine and the other forms of mass medical practice is not realized. The average practitioner's conception of these socialistic or paternalistic tendencies seems limited to a rather hazy idea that they are not desired in this country. As to the actual methods of their functioning, the effect on the patient and the doctor, their limitations or possibilities, he seems ignorant. To understand these types of medical practice we must refer to the countries where such practices are in vogue.

State paternalization of medicine began in Germany in 1883. Bismarck, in his attempt to thwart the progress of Marxian socialism, announced to the Reichstag repressive measures intended to restrain the excesses of social democracy. Among these were insurance for the working man against old age, accidents, sickness and inability to work.

Since state medicine was introduced in Germany in 1883 it has spread until today it is more or less compulsory in England, Germany, France, Switzerland, Austria, Russia, Belgium, Chile, Hungary, Italy, Latvia, Luxembourg, Poland, Roumania, Yugoslavia, Esthonia, Greece, Japan, The Irish Free State, Lithuania, Norway, Portugal and Czechoslovakia, and is voluntary in Argentine, Denmark, Palestine, Sweden, Australia, New Zealand and Spain. It is being considered in certain provinces in Canada, in certain countries of South America, and even in the Commonwealth of Massachusetts. With such generalization of state medicine it behooves the medical profession to become educated to the various forms of paternalistic or socialistic medicine and not to dismiss it with a gesture of contempt.

Theoretically state medicine can be defined as the complete control of the practice and teaching of medicine by the Government. If we look for a moment at the European countries, where state medicine has been in vogue for many years, we will see that from a practical viewpoint absolute jurisdiction in all matters pertaining to the teaching and practice of medicine does not rest with the State. The teaching of medicine has been for the most part in

this country as well as in others under the control of the State. In England and the United States privately endowed medical institutions are not uncommon but on the continent they are the exception rather than the rule. The private practice of medicine is indulged in and accepted in practically all European countries. In Russia, of course, the control of medicine is almost entirely in the hands of the central government.

While studying in Europe it is difficult for the average American physician to obtain a true picture of medical conditions. We have all read of the horrors of medical practice in Europe. After spending a year in European clinics I cannot say that the medical profession is in a pitiful state. The reason for this is that the American physician comes in contact with that small 20 per cent of the profession that is fairly well situated, considering the poverty that exists in central European countries.

That the majority of physicians in Germany are in a distressing condition is true. Eighty per cent of them draws income from the "Krankenkassa," the average income of the insurance physicians being six thousand marks a year (about \$1500) although 40 per cent does not make more than one thousand marks a year. Only 5 per cent of the physicians does private practice. The other 15 per cent have hospital appointments.

The small group of physicians who do private practice are admired not only by the laity but also by the medical profession. Their income is often quite large even when compared to the income of physicians in the United States. Dr. Karel Koch of Bratislava, Czechoslovakia, a professor in the state controlled surgical clinic, has an elaborate private surgical sanitarium where he has a practice that could be envied by many of our most active surgeons. One of Vienna's most renowned surgeons, having been denied a chair in the university because of his faith, has resorted to private practice. He has one of the largest private practices in that part of Europe and does his surgical work in private hospitals. Those physicians who are in private practice and are in the state controlled hospitals cannot be said to be in a deplorable condition. Even in the state hospitals the professors and certain of the first assistants are permitted to have private patients. In the charity hospital at the University of Komenskeho in Bratislava there are a number of private rooms provided for the staff's private patients.

Under any form of state medicine, whether it be health insurance or the panel system as practiced in England, malingering is encouraged and the physician is not bound by medical ethics. Having spent two years in a hospital where Veterans' Bureau patients were treated I know

that malingering is common under state controlled hospitalization. To deal with a malingering patient is difficult under these conditions for if he is discharged from the hospital under the diagnosis of "No Disease," as a rule he immediately consults his congressman and the political angle assumes a big role. Our military hospitals are able to cope with a situation of this sort but such would not be the case if the hospitals were under civilian jurisdiction of a political nature. Malingering has been found too prevalent in Germany where "Christmas Fever" is common. Such wholesale malingering has a demoralizing effect upon the individual physician. The panel system in England produces the same results. In 1929, 410,903 cases were referred to the regional medical officers for the question of malingering.

We learn from a Moscow correspondent of the London *Sunday Observer*, "that the socialization of medicine does not always work out very satisfactorily in actual life as was shown when a brigade of volunteer investigators from the official organ of the Moscow Soviet *Rabochaya Moskva*, made a flying survey of the medical institutions of Moscow and its environments. The first point that attracted the attention of the investigators was the extreme overcrowding of the hospitals and its accompaniment, the failure in some cases to render medical aid when it was needed, this last factor increasing the number of fatalities. In the large Botkin Hospital 40 per cent of the deaths take place during the first five days after admission mainly, according to the investigators, because the patients were not received into the hospital in time. Patients who require surgical aid are in the most lamentable condition. A month and a half may pass before the patient obtains a bed in the surgical department." What state medicine has done for the Russian people is reported in the *Literary Digest* as follows: "All the dignity and authority of the medical profession in Soviet Russia is regulated by the Government. There is not much private practice—there are few private hospitals—and the great majority of Soviet physicians are working at fixed salaries."

Why has state medicine, health insurance and the panel system assumed such magnitude in recent years? Why is there at present a national committee on the cost of medical care? Why has the medical profession been singled out for investigation? The science of medicine has advanced far beyond any one's power of conception during the past thirty years. Medical graduates are better trained than ever before. Hospitals, as a whole, have been standardized and as a result are far superior to those of only fifteen years ago. The poor are adequately taken care of as is indicated by the periodic

enlargement of city hospitals and the formation of new health clinics in the poorer sections of our large cities. Staff members of city institutions are no longer political appointees but chosen because of their professional ability and ethical standing.

It must be assumed that the answer to the above questions comes under the head of medical economics. It has been said that medical science has advanced but that medical economics has remained stationary. We have been told that the cost of medical care is too high. The great middle class cannot receive adequate medical care under our present system. However, it is the same class that, claiming inability to pay for medical care, can purchase automobiles, radios and other luxuries. They can always find the money to pay for divorces, attend the theater, the playgrounds and the circus regularly. Perhaps our economic system should be revised. The middle class spends freely in times of plenty but during sickness and misfortune seems penniless.

On the other hand, there are fundamental weaknesses in our present system of medical service which can be remedied. Hospitalization is too expensive. The reason for this is more or less clear. The number of private hospitals in the majority of cities is in excess of the service needed. Competition between churches and races is keen. The expense of maintaining a hospital is high. During a depression of this magnitude many hospitals run on a very narrow margin. To meet expenses hospital care must necessarily cost more than the middle class can afford to pay. In Cincinnati a survey of hospital facilities showed them to be adequate but this did not stop further building of hospitals. Hospital construction is often fostered without consultation with those who have studied the hospital situation. The best hope for solution of this problem is an intelligent understanding of the community hospital problem and larger endowments to provide cheaper rooms and not for building expansion.

The medical profession as a whole has not been sufficiently interested in the education of the public along certain lines. A perusal of our daily papers will show many times as many advertisements of patent medicines and unapproved health apparatus as there are legitimate health articles. It is estimated that the people of the United States spend \$200,000,000 on patent and proprietary medicines a year. A study made in New York some time ago brought out that there were some fifty-nine different types of healing cults functioning in New York City. Lack of education can be the only cause of such startling information.

It is also true that the average physician is not sufficiently familiar with mental hygiene. We

are prone to tell a patient nothing is wrong and he subsequently falls into the hands of a cultist. Ours is a complicated form of civilization and we meet many problems with which the average individual is unable to cope. A knowledge of mental hygiene will assist us in aiding the mentally sick thereby reducing the number of patients falling into the hands of the irregular practitioner.

In considering the physician's future, Dr. Terry M. Townsend in a recent address before the New York County Medical Society on "Hospitals and Their Trend," said:

"Hospital clinics, welfare organizations and all subsidiaries that skirt the outer edge of our profession can materially aid us in our present unsatisfactory economic condition. They can educate their trustees, contributors and all who come to their doors that the doctor is worth his fee. They can impress on all within their sphere of influence that physicians must eat, clothe themselves and their dependents, live and die as other mortals and that these phenomena require coin or government notes.

"The continued pauperization of the middle class, upon whom the physician is dependent, will drive us either to state medicine or to starvation. As neither path is pleasant, we must hew another through the darkness. State medicine would injure the hospital because it would injure the physician. 'The ambition to discover new knowledge would be gradually stifled and individual initiative would not rise to new levels; ambition and individual initiative should remain as priceless incitants to progress.'"

1010 Professional Building.

STORE FOOD ITEMS TO BEST ADVANTAGE

Many helpful suggestions on the storage of food are offered by Miss E. M. Geraghty in the March *Hygeia*. In addition to suggesting inspection of foods to separate good from bad and washing of fruits and vegetables before storage, Miss Geraghty points out:

1. Bread, crackers, cookies and cake should be kept in tightly covered containers in a cool place.
2. Butter should be kept at a temperature of from 6 to 10 F.
3. Cereals should be kept in covered containers or packaged in a cool dry place and should be purchased frequently.
4. Cheese should be kept in a cool place but should not be air-tight.
5. Cocoa, chocolate and coffee should be kept in air-tight containers in a cool place.
6. Eggs should be kept in a cool dry place.
7. Fats and oils should be stored in a cool, dry, dark room, away from strong odors and flavors. They should be purchased frequently.
8. Fish should be packed in ice or maintained at a temperature of from 20 to 30 F. They should not be kept for a long time. Dried, salted fish should be stored in a cool place.
9. Vegetables and fruits require different storage for each type.

ACNE ROSACEA: RESPONSE TO LOCAL TREATMENT FOR DEMODEX FOLLICULORUM

Samuel Ayres, Jr., and Nelson Paul Anderson, Los Angeles (Journal A. M. A., March 4, 1933), state that in seventy-seven cases of acne rosacea and pityriasis folliculorum (Demodex), Demodex folliculorum was found in superficial pustules and follicular scales in from moderate to large numbers. In sixty-nine of these patients whose results could be followed, striking clinical improvement or cure was obtained in all but three cases by the use of a strong antiparasitic ointment. Out of sixty-three cases of typical acne rosacea seen during the past two years, in which examination for Demodex folliculorum was made, the organism was found in fifty. With the exception of three patients who did not return for observation, excellent results were obtained in all but two of these cases by the use of a strong antiparasitic ointment without any other treatment. Irrespective of any argument concerning the causal relationship of Demodex folliculorum to acne rosacea, the fact remains that local antiparasitic treatment has given clinical results far surpassing anything in the authors' experience with this disease.

A CASE OF MISTAKEN IDENTITY—A STORY THAT DEALS MAINLY WITH FOUR VICTIMS

"A case of mistaken identity, if ever there was one," mused Sherlock Holmes in relating a case which had come to his attention that very evening.

"Terrible, terrible—two young, strong, upright full-blooded brothers completely wiped off the face of the earth and two others sadly crippled for life due to criminal ignorance, carelessness and neglect."

Holmes tells in detail how he was called on a case which brought him to a twenty apartment building built in the mouth of Head Street. He tells how the landlord, a careless man, refused to care for the apartments because, as he said, they were only temporary structures. The foundation was weak; the roof was poor. The janitor, B. Rush, was also slovenly; he had never been taught otherwise. Flossie, the housemaid, was no better. A slender, willowy creature, she was perpetually tired and limp. She simply remained curled up in her little quarters, waxen and limp.

The tenants were all millers, employed in the service of the landlord. Just about the time that the building became decadent, four new tenants moved in. Four one-room apartments were thrown up in the rear of the older structure to house them. The new tenants were millers, too, and because they were bigger and stronger, though younger, they were capable of effective work. But these were permanent tenants. They had no intention of moving. In less than a year's time their apartments began to deteriorate. A year later the boys were found feverish and aching, but still they received no attention from the master. Too late, Holmes arrived on the scene. Infection had set in, and Holmes watched the lives of two of the brothers ebb slowly away. First aid, quickly administered, saved the other two brothers, although they will be crippled for life.

Who were these brothers? Watson ventured a guess. His guess was correct. And as Holmes suggested retiring for the night, the story which appears in the March issue of *Hygeia*, written by Lon W. Morrey, comes to a close. Who were the four permanent brothers?

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AUGUST, 1933

EDITORIALS

ARTHUR ROCHFORD McCOMAS TESTIMONIAL DINNER

An outstanding feature of the Seventy-Sixth Annual Meeting of the Missouri State Medical Association held in Kansas City May 1 to 4 was the Testimonial Dinner tendered by a group of friends to Dr. Arthur Rochford McComas, of Sturgeon. This occasion in honor of a past President of the Association and Chairman of the Council continuously since 1916, except for the year of his presidency, was planned by a committee of sponsors who believe in honoring those to whom honor is due.

The wholesome response to the opportunity afforded fellow physicians to participate in this dinner, and the expressions there and since adequately center one's thoughts on certain facts: The Missouri medical profession is proud of this man of unusual and meritorious qualifications; he has been and is a leader in organized medicine, and more, a teacher to those who would know what general medicine and surgery are, and to those who would have knowledge of medical ethics, of the duties, responsibilities and qualifications of the true physician; he has been a counselor in many things, a healer of physical, and oftentimes spiritual and mental ills.

Fellow physicians, lawyers, journalists and others attested his abilities, professional and community standing, honesty, sincerity, sacrifices, hardships, rewards, ideals and aims. Countless hundreds at home by the fireside on that evening who knew of this surprise dinner to one who is honored and loved by many offered their thoughts and thanks in silence or in words which because of distance, were unheard by him.

Missouri medicine has profited by the labors, the honesty, the sincerity, the bigness of McComas, and his colleagues knowing this wanted him to know they are aware of it and that he and his efforts are acknowledged, valued and appre-

ciated. One of the messages of congratulation bearing the statement, "He is to me King of Kings," aptly classifies this man of great dynamic energy.

Few men know of the hardships and losses that have come to Dr. McComas and few know of the hours, days, yes weeks, that he has spent at personal sacrifice laboring for the betterment of organized medicine and for a better medical service to the ones who need it, the sick man, woman and child. He is a man of few words but with a massive and a human heart filled with wholesomeness and kindness, and a brain always active in searching for new truths and new medical development. The man is endowed with unlimited friends and qualities that emanate friendship to those around him.

Upon the completion of forty-three years of practice in the community in which he was born and in the territory where his father, the late Dr. J. M. McComas, was a pioneer physician, Arthur R. McComas lives among friends under the blue Missouri skies in an environment that is rich with memories to him. His privileges are the pleasures of those with whom he daily comes in contact. Missouri medicine can but feel just pride in recognizing this man as a leader, and placing him in the position where his leadership, vision, sincerity, and honesty of purpose best serve his profession.

To Arthur Rochford McComas, a prayer for you, and long may you be blessed with life and health. Long may we profit by your knowledge, wholesome counsel and sincere friendship. Your hours of rest should be more calm and peaceful because of the relief you have given to others. When you lie awake at night listening to hail and rain, know you it falls more lightly where you eased ache and pain. In many a home storms are less severe, the winter ice and snow less cold, and the summer sun more bright, because of the confidence and comfort you have taken therein.

One could wish for nothing better than to mold the usefulness of one's own life to match that of his, Arthur Rochford McComas, physician, friend, counselor. When Missouri physicians paid tribute to him with this Testimonial Dinner, they honored themselves in acknowledging to him and to the world their indebtedness to and their respect and love for Arthur Rochford McComas.

Addresses delivered at the dinner appear on page 346.

MILWAUKEE SESSION OF THE AMERICAN MEDICAL ASSOCIATION

The Milwaukee Session of the American Medical Association was exemplary of the organization. With the decorum and dignity

characteristic of this great organization the difficult problems confronting the medical profession today were reported on, studied and future procedures planned. The scientific sessions were informative and in many instances scientific exhibits were coordinated adding much of value to the lectures. The attendance exceeded expectations, being 4601. Missouri was represented by 126 fellows.

Dr. Edward H. Cary, Dallas, Texas, in his presidential address outlined some of the outstanding work of organized medicine during the last year including accomplishments and trends directed. Important among these were the amendment of the Volstead Act by Congress permitting the physician to use his own judgment in prescribing alcoholic liquors; emphasizing the contention that a Federal law affecting the practice of medicine is undesirable under the control of a lay bureau; advancement in narcotic control; the curbing of hospitalization of war veterans with nonservice connected disabilities, and the acceptance by the profession of the Minority Report of the Committee on the Costs of Medical Care.

Dr. Dean Lewis, Baltimore, President-Elect, expressed the belief that the medical profession has shown more ability to take care of its own business during the last two years than any other profession and advised the simplification of medical practice as the aim of the American Medical Association.

Among subjects discussed by the House of Delegates were the better identification and recognition of specialists; the protection of the health interests of the public by efforts to curtail misleading and misrepresentative radio broadcasting of medicinal preparations; the status of occupational therapy; enlarged activities of the Council on Medical Education and Hospitals; the hospitalization of war veterans with service connected disabilities in Army, Navy and Public Health Service hospitals when feasible; the restriction of competitive practice by medical schools; the endorsement of the Minority Report of the Committee on the Costs of Medical Care; the possibility of restricting the number of medical graduates; uniform control of narcotics, and contract practice.

In regard to contract practice, the Committee on Medical Economics recommended that the action of county societies be based on the recommendations of the Judicial Council of the American Medical Association, viz.:

By the term "contract practice" as applied to medicine is meant the carrying out of an agreement between a physician or a group of physicians as principals or agents and a corporation, organization or

individual, to furnish partial or full medical services to a group or class of individuals for a definite sum or for a fixed rate per capita.

Contract practice *per se* is not unethical. However, certain features or conditions if present make a contract unethical, among which are: (1) When there is a solicitation of patients, directly or indirectly. (2) When there is underbidding to secure contracts. (3) When the compensation is inadequate to assure good medical service. (4) When there is interference with reasonable competition in a community. (5) When free choice of a physician is prevented. (6) When the conditions of his employment make it impossible to render adequate service to his patients. (7) When the contract because of any of its provisions or practical results is contrary to sound public policy.

Each contract should be considered on its own merits and in the light of surrounding conditions. Judgment should not be obscured by immediate, temporary or local results. The decision as to its ethical or unethical nature must be based on the ultimate effect, for good or ill, on the people as a whole.

In the scientific session ten Missouri fellows delivered addresses and fourteen opened discussions. Those delivering addresses and their subjects were:

Dr. Ralph A. Kinsella, St. Louis, Types of Chronic Arthritis.

Dr. Thomas G. Orr, Kansas City, The Indications for Enterostomy.

Dr. LeRoy A. Calkins, Kansas City, Management of the Third Stage of Labor.

Dr. August A. Werner, St. Louis, Minimum Theelin Dosage Necessary to Stimulate Endometrial Changes in Castrated Women.

Dr. George E. Hourn, St. Louis, The Anatomic Contributions of Dr. Mosher.

Dr. Arthur W. Proetz, St. Louis, Principles of Sinus Treatment in the Light of Physiologic Facts.

Dr. Jean V. Cooke, St. Louis, Acute Leukemia in Children.

Dr. Roland M. Klemme, St. Louis, The Surgical Treatment of Septic Meningitis.

Dr. D. K. Rose, St. Louis, The Treatment of Certain Cases of Pyelitis of Pregnancy Without the Use of the Ureteral Catheter: An Explanation Based on the Physiology of the Bladder.

Dr. J. Albert Key, St. Louis, The Effect of a Local Calcium Depot on Osteogenesis and Healing of Fractures.

The Fellows opening discussions were: Dr. O. Jason Dixon, Kansas City; Drs. Ralph A. Kinsella, Archer O'Reilly, Warren H. Cole, William E. Shahan, John Green, William F. Hardy, James B. Costen, M. F. Arbuckle, Jean V. Cooke, Martin F. Engman, Jr., Horace W. Soper, Frank D. Gorham, and Willard Bartlett, Jr., St. Louis. Dr. J. L. Myers, Kansas City, acted as vice chairman of the Section in Laryngology, Otology and Rhinology.

Dr. Walter L. Bierring, Des Moines, was elected President-Elect. Other officers elected are: Dr. John H. Musser, New Orleans, elected Vice President; Dr. Olin West, Chicago, re-elected Secretary; Dr. Herman L. Kretschmer,

Chicago, Treasurer; Dr. F. C. Warnshius, Grand Rapids, reelected Speaker of the House, and Dr. N. B. VanEtten, New York, Vice Speaker. Dr. Austin A. Hayden, Chicago, was elected a member of the Board of Trustees to succeed Dr. J. H. Walsh, Chicago, who was ineligible for reelection. Dr. C. B. Wright, Minneapolis, was elected a Trustee to succeed Dr. A. R. Mitchell, Lincoln, Nebraska, now deceased, whose term of office had expired.

President Dean Lewis nominated the following to serve as members of standing committees: Dr. J. H. O'Shea, Spokane, to succeed Dr. Frank W. Cregor on the Judicial Council for a term of five years. Dr. James S. McLester, Birmingham, to succeed himself as a member of the Council on Medical Education and Hospitals for a term of seven years. Dr. James E. Paulin, Atlanta, to succeed Dr. Roger S. Morris on the Council on Scientific Assembly for a term of five years. All of these nominations were unanimously confirmed.

Among the fellows who were elected affiliate fellows were, Drs. John S. Mott, C. S. Newlon, C. W. Burrill, A. H. Cordier, J. P. Kanoky, H. S. Crawford, all of Kansas City, Missouri.

Cleveland was selected as the place of meeting for the 1934 Session.

REORGANIZATION OF ST. LOUIS HEALTH DEPARTMENT

The appointment of Dr. Paul J. Zentay, St. Louis, as chief of the medical, dental and nursing section of the St. Louis Department of Health, was one of the principal steps in a recent reorganization of the department. The changes are in accordance with city ordinance 40,109 approved June 20, which was outlined by Dr. Joseph F. Bredeck who was appointed Health Commissioner of St. Louis last April.

The reorganization modernizes the department by centralizing and more closely connecting the various services. The plan is based on the recommendations of Dr. Haven Emerson of Columbia University in 1927 and is along lines approved by the United States Public Health Service and the American Public Health Association.

All activities of the department, with the exception of secretarial service and popular health education, will be grouped under four sections the heads of which will meet with the health commissioner in conference at least once a week. The four sections are, medical, dental and nursing, laboratory, food control, and sanitary.

The section on medical, dental and nursing

includes services in communicable diseases, tuberculosis, venereal diseases, child hygiene, prenatal care, public health nursing, dentistry and health center clinics. Dr. Zentay, appointed head of this section, came to St. Louis in 1926 following extensive work in Hungary where he was born. He was formerly an instructor in pathology at Budapest and after service in the World War became medical director of the American Red Cross in Hungary. He is now instructor in clinical pediatrics in the Washington University School of Medicine, pediatrician to the Shriners' Hospital, associate pediatrician on the staff of the Jewish Hospital, pediatrician in charge of the Salvation Army Hospital and on the staff of the Central Institute for the Deaf. He is secretary of the St. Louis Pure Milk Commission.

Dr. Joseph C. Willett was reappointed chief of the municipal laboratory in charge of chemical and bacteriological work. Dr. J. S. Koen, formerly chief meat inspector was appointed chief of the food control section. Mr. W. Scott Johnson, Jefferson City, was appointed chief sanitary engineer.

Other appointments include: Supervisor of milk control, Dr. Ernest C. McCulloch; diagnosticians, Drs. E. X. Link and Fred A. Kramer (reappointed) and Drs. James H. Cummings and John Hennelly; tuberculosis controller, Dr. H. I. Spector (reappointed) and assistants, Drs. R. E. Byrns, B. J. McGinnis, R. O. Muethers, Charles Ehlers and J. J. Ryan; child welfare physicians, Drs. Franz Arzt, Katherine Bain, Ben Bull, Joseph Bauer, Adrian Bleyer, Ralph L. Cook, Max Deutch, Jerome Diamond, Charles Drabkin, Lawrence Goldman, V. Gould, A. M. Hofsommer, Victor Hrdlicka, J. G. Jones, E. E. Kneal, Grover B. Liese, Noble McCormack, John W. McHaney, Milton H. Meyerhardt, William Neun, Louis Padberg, Frances Ritchie, E. H. Rohlfing, Kate Spain and L. L. Collins; chief of venereal clinic, Dr. A. L. Kavanaugh with assistants, Drs. D. W. Eades, E. C. O'Brien, Clyde Kane, T. R. Siebert and Roland Kold.

In addition to the coordination within the department Dr. Bredeck and his new appointees plan a closer cooperation with physicians in private practice, the medical schools and health organizations.

CLEVELAND DIAGNOSTIC SERVICE

Contract practice and the Report of the Committee on the Costs of Medical Care have caused much thought and argument. Several commendable efforts have been made to solve the

problems. A plan has already been put in operation by the Academy of Medicine of Cleveland. On June 5 a part-time diagnostic and consulting clinic for persons to whom full payment for such service would bring undue hardship was inaugurated.

The plan of the academy includes a social service department with trained workers to which the family physician can send patients for rating. This department charges the patient fifty cents for a rating which fee covers any re-rating within one year, makes an investigation of his financial condition and determines whether he can afford to pay a full fee, a percentage of a full fee (the percentage indicated) or is properly a subject for charity. Physicians are expected to send for rating only those persons who are in need of diagnostic or consulting service by specialists.

The patient is given a card indicating the percentage of payment which he can afford and is sent back to the family practitioner or to a specialist previously chosen by the physician from a list of all cooperating specialists and furnished to all academy members.

The academy will refer no patients to specialists under this plan. Should a patient apply on his own volition for a rating he is referred to his family physician; if he has none he is furnished with the names of several general practitioners in his vicinity from which he can make a selection. This physician then follows the procedure outlined above if in his opinion the circumstances so indicate.

It is understood that the cooperating specialists agree to furnish the diagnostic procedure at the percentage of their regular fee indicated on the card of the patient. It is also understood that payment of these part fees shall be made in cash.

The termination date on each card is established by the social service department in accordance with the facts of the case based on anticipated change of employment, etc. The card applies to all dependents in the family.

In referring the patient to a specialist, the family practitioner follows the usual routine procedure of personal contact with the specialist by visit, telephone or letter. The specialist returns the patient to the family physician and reports his findings to him, unless otherwise instructed by the family physician.

The academy supplies the specialist with form postcards on which to write the name and number of the patient and the date first seen for mailing immediately to the academy so the committee on economics may evaluate the plan as it progresses.

NEWS NOTES

Dr. J. Curtis Lyter, St. Louis, will attend the International Congress for the Study of Diseases of the Thyroid Gland in Berne, Switzerland, August 10, 11 and 12 and will also attend clinics in Paris and Vienna.

The Kansas legislature at its 1933 session enacted a bill requiring all physicians who have been licensed by the Board of Medical Registration and Examination to register annually between July 1 and October 1.

Dr. Chris M. Sampson, St. Joseph, delivered an address at the forty-first annual convention of the National Society of Physical Therapeutics which met in Chicago in June. His subject was "Some New and Epochal Facts About Diathermy."

Dr. Anna A. Smith, Poplar Bluff, osteopath and owner of a private hospital, was sentenced to three years in the penitentiary on June 20 when a jury convicted her of performing an illegal operation. She appealed the case. Dr. Smith is codefendant in a manslaughter charge brought June 23 the result of another alleged illegal operation.

The St. Louis Clinics will offer an annual award of \$100 and a certificate of award to the member of the St. Louis Medical Society presenting the best paper at the St. Louis Medical Society during the coming year. The competition will open January 1, 1934, and extend to January 1, 1935. The prize will be presented at the Clinical Conference of the St. Louis Clinics in May, 1935.

On July 25 the Missouri law allowing physicians to write medicinal liquor prescriptions in quantities exceeding a pint became effective. At the same time it became necessary for the physician to state on the prescription the frequency of the dose and the period of time the liquor is intended to last. The physician is now not required to make any report to the clerk of the county court as formerly.

Dr. Richard L. Sutton, Kansas City, was the guest of the Linn County (Iowa) Medical Society at Cedar Rapids, May 18. Following an afternoon clinic and a dinner at which the facul-

ty of the Medical School of the University of Iowa also were honor guests. Dr. Sutton delivered a lecture on his recent expedition to the Arctic. On the evening of May 19 Dr. Sutton lectured to the members of the staff and their families at the Mayo Clinic, Rochester, Minnesota.

The Leslie Dana gold medal, awarded annually for the most outstanding achievements in the prevention of blindness and conservation of vision, was presented to Dr. William H. Luedde, St. Louis, director of the department of ophthalmology of the St. Louis University School of Medicine, on June 19. Presentation was made by Mr. Lewis H. Carris, New York, managing director of the National Society for the Prevention of Blindness. The award was established eight years ago and Dr. Luedde is the first St. Louisan to receive this honor. Rev. Alphonse M. Schwitalla, dean of St. Louis University School of Medicine, and Rev. Robert Johnston, president of the St. Louis Society for the Blind, delivered addresses.

Dr. Bransford Lewis, St. Louis, was a participant in a chess tournament sponsored by the National Chess Federation at the Century of Progress, Chicago, on successive Sundays in July. A series of games were played using a regular board, the plays being shown on a larger outside replica with people in medieval costumes representing the chess pieces. As the moves were made on the small board by the players, a herald escorted the individuals to their places on the larger board. Dr. Lewis, who is president of the Chess Forum of St. Louis, and Mr. Alrick H. Man, president of the Frank Marshall Chess Club of New York City, played the third game of the series on July 12. Dr. Lewis won the game. Approximately 4000 people witnessed the game.

The following articles have been accepted for New and Nonofficial Remedies:

Abbott Laboratories

Sterile Ampoules of Procaine Hydrochloride Crystals (Abbott) 100 mg.

Sterile Ampoules of Procaine Hydrochloride Crystals (Abbott) 120 mg.

Sterile Ampoules of Procaine Hydrochloride Crystals (Abbott) 150 mg.

Sterile Ampoules of Procaine Hydrochloride Crystals (Abbott) 200 mg.

Lederle Laboratories, Inc.

Refined and Concentrated Antipneumococcic Serum Type II (Lederle)

Eli Lilly & Co.

Extralin

Pulvules Extralin, 0.5 Gm.

Cutter Laboratory

Polyanaerobic Antitoxin, Prophylactic (Tetanus-Gas Gangrene Antitoxin)

Polyanaerobic Antitoxin, Therapeutic (Gas Gangrene Antitoxin)

E. Fougera & Co.

Capsules Lipiodol—Lafay, 0.5 Gm.

Tablets Lipiodol—Lafay, 0.04 Gm.

Merck & Co., Inc.

Calcium Gluconate—Merck

Phenobarbital Sodium—Merck

G. D. Searle & Co.

Sodium Morrhuate 5 per cent with Benzyl Alcohol

Lederle Laboratories, Inc.

Ampules Glucose (U. S. P. Dextrose) Solution—Lederle, 20 c.c.

Ampules Glucose (U. S. P. Dextrose) Solution—Lederle, 50 c.c.

Ampules Glucose (U. S. P. Dextrose) Solution—Lederle, 100 c.c.

Parke, Davis & Co.

Antipneumococcic Serum (Felton) Type I

Erysipelas Streptococcus Antitoxin Refined and Concentrated—P. D. & Co., 20 c.c. syringe package

Sal-Ethyl Carbonate

Tablets Sal-Ethyl Carbonate, 1 gr.

Tablets Sal-Ethyl Carbonate, 5 grs.

Tablets Sal-Ethyl Carbonate with Amidopyrine

Twenty-seven promotions and four new appointments became effective in the St. Louis University School of Medicine, July 1. The appointments were announced June 21 by the Rev. Alphonse M. Schwitalla, S. J., dean of the school.

Dr. John Zahorsky became director of the department of pediatrics advanced from chairman of the department. Dr. E. T. Senseney, formerly assistant professor of otolaryngology, became a professor.

Those promoted from assistant to associate professors were: Dr. S. B. Westlake, otolaryngology; Dr. A. E. Horwitz, orthopedic surgery; Dr. F. H. Albrecht, orthopedic surgery, and Dr. Fritz Neuhoﬀ, internal medicine.

Advanced from senior instructors to assistant professors were: Dr. E. P. North, ophthalmology; Dr. Julius A. Rossen, pediatrics; Dr. John W. Stewart, surgery; Dr. R. D. Alexander, surgery; Dr. E. Lee Myers, otolaryngology, and Dr. E. Lee Shrader, internal medicine.

Instructors who became senior instructors are: Dr. R. L. Cook, pediatrics; Dr. A. A. Werner, internal medicine; Dr. L. R. Padberg, pediatrics; Dr. C. J. Gissy, ophthalmology; Dr. J. L. Mudd, surgery; Dr. David P. Ferris, otolaryngology; Dr. Carl A. Powell, internal medicine.

Drs. Leo Bartels, Eugene Hartley, J. P. Altheide, D. B. Stutsman and Grayson Carroll were made instructors in urology; Drs. W. H. Norton and J. M. McCaughan were made instructors in surgery and Dr. C. E. Eimer was made instructor in otolaryngology.

New appointments were: Drs. J. H. Gross, assistant professor of ophthalmology; J. I. Simon, assistant professor of surgery, and J. L. Gross and V. L. LoPiccolo, assistant professors of medicine.

The following speakers responded to invitations from the Postgraduate Committee of the State Association to deliver addresses at recent meetings of the component county medical societies:

Drs. O. F. Bradford and Claude J. Hunt, Kansas City, were guests of the Caldwell-Livingston County Medical Society at Chillicothe, March 30. Dr. Hunt spoke on "Thyroid Diseases" and Dr. Bradford spoke on "Pyelitis in Childhood."

The Cape Girardeau County Medical Society had as its guest at Cape Girardeau on April 12, Dr. Quitman U. Newell, St. Louis, who spoke on "Diagnosis and Treatment of Carcinoma of the Uterus." On May 20 Dr. Newell was the guest of the St. Francois-Iron-Madison County Medical Society and spoke on "The Cancer Problem in Gynecology; A Plea for Early Diagnosis."

On April 14 Drs. M. H. Clark and O. Jason Dixon, Kansas City, were the guests of the Nodaway County Medical Society at Maryville. Dr. Clark spoke on "The Relationship of General Diseases to Diseases of the Eye" and Dr. Dixon spoke on "The Management of Acute Infections of the Head and Neck."

Dr. John R. Caulk, St. Louis, was the guest of the Buchanan County Medical Society at St. Joseph, April 19, and spoke on "The Author's Cautionary Punch Operation for the Removal of Prostatic Obstruction."

The St. Francois-Iron-Madison County Medical Society had as its guests on April 26 Drs. G. O. Broun and W. T. Coughlin, St. Louis. Dr. Broun spoke on "Parenteral Use of Liver Extract in Pernicious Anemia," and Dr. Coughlin spoke on "Personal Experience With Tumors of the Breast."

The Clay County Medical Society had as its

guest at Liberty, April 27, Dr. C. C. Conover, Kansas City, who spoke on "The Pathology and Therapeutics of the Diseased Heart."

Drs. D. A. Williams and Paul V. Woolley, Kansas City, were guests of the Nodaway County Medical Society at Maryville, May 12. Dr. Williams spoke on "Lesions of the Esophagus" and Dr. Woolley spoke on "The Treatment of Anorectal Diseases."

The Jasper County Medical Society had as its guest at Joplin on May 23, Dr. Frank I. Ridge, Kansas City. Dr. Ridge spoke on "The Practical Application of Endocrinology."

The following resolution condemning sensational presentations of plastic surgery by irresponsible and nonrepresentative individuals and groups was adopted by the Society of Plastic and Reconstructive Surgery at its meeting at the New York Academy of Medicine, May 26:

WHEREAS, sensational stories frequently appear in lay publications concerning the cosmetic repair of the face and body with special reference to the correction of nasal malformations and the eradication of the stigma of age; and

WHEREAS, these stories convey the erroneous impression that plastic surgery is purely for cosmetic purposes and involves procedures that may safely be performed by lay cosmeticians in an environment that does not provide the strict asepsis and other safeguards of a hospital operating room; and

WHEREAS, these stories are designed to appeal to, and promote the exploitation of, unstable and often psychopathic individuals who have no genuine deformity but are overly sensitive to negligible imperfections and the changes wrought by age, therefore be it

Resolved, That the Society of Plastic and Reconstructive Surgery take steps to inform the public (1) that plastic surgery is a regular surgical specialty embracing the reconstruction of defects and malformations that interfere with normal function as well as the repair of gross cosmetic deformities; (2) that those engaged in the practice of plastic and reconstructive surgery require the same scientific and technical training as the practitioners of any other surgical specialty and are bound by the same ethics, adopted in the interests of the public, that govern all reputable physicians, and (3) that the safe performance of even minor plastic and reconstructive procedures demands the precautions and safeguards of a first grade operating room; and be it further

Resolved, That this society condemn the performance of any plastic operations whatsoever by lay cosmeticians and the use of beauty shops, hotel suites and convention halls for this purpose; and be it further

Resolved, That this society warn the public of the dangers of any surgery at unqualified hands and the unreliability of sensational, self-aggrandizing publicity; and be it further

Resolved, That this society urge the community to recognize the social aspects of plastic and reconstructive surgery and make it available, at competent hands, to the poor as well as the rich in cases where cosmetic or functional repair is genuinely indicated.

OBITUARY

WENZEL CARL GAYLER, M.D.

Dr. Wenzel C. Gayler, St. Louis, a graduate of the Beaumont Hospital Medical School, 1901, died at the Deaconess Hospital July 12 following an operation for tumor of the brain. He was 56 years old.

Dr. Gayler was born in St. Louis. His father, who survives him, is Carl Gayler, a civil engineer who assisted James B. Eads in the construction of Eads Bridge and also constructed the Grand Boulevard viaduct. His mother was a member of the von Rotteck family of Freiberg, Germany.

Dr. Gayler received his preliminary education in St. Louis and after obtaining his medical degree took postgraduate work in Berlin.

Upon returning to St. Louis he engaged in general practice but later entered the field of obstetrics and gynecology. He was for many years assistant to Dr. Walter B. Dorsett in the gynecology department of the St. Louis University School of Medicine and upon the death of Dr. Dorsett was placed in charge of the gynecology outclinic, a position which he held for twelve years. He was at the time of his death head of the staff on obstetrics and gynecology of the Deaconess Hospital and on the staff of St. Anthony's Hospital and the St. Louis University School of Medicine.

During the World War Dr. Gayler enlisted in the medical corps of the army and was commissioned with the rank of captain.

Dr. Gayler was a loyal member of organized medicine and served constantly whether in official capacity or as a member. He was a delegate to the Missouri State Medical Association Sessions in 1924, 1932 and 1933. He was a member of the Council of the St. Louis Medical Society from 1917 to 1920 and served as President of the State Medical Association in 1930-1931. He was a member of the American College of Surgeons.

Dr. Gayler will be greatly missed. He was a faithful adherent to every ethical standard of the profession and was esteemed and liked by his colleagues. He was quiet and unassuming but his worth was not hidden. He won the respect and admiration of all who came in contact with him.

He is survived by his widow, two daughters, two sisters, two brothers and his father.

EDWARD HENRY KESSLER, M.D.

To extol Dr. Kessler with laudatory platitudes is as unnecessary as it would be distasteful to him. We would rather register our expression of gratitude for what he has done for the medi-

cal profession and for humanity. The integral and major part he took in the development of the science and art of radiology is known to us all.

Dr. Kessler was among the very first to realize that medicine and surgery had entered upon a new era of precision in diagnosis, to a degree theretofore utterly undreamt of, by the discovery of the roentgen ray. Grasping its inestimable value to medicine and mankind, he determined to devote his life and energies to the development of this new science.

He brought to bear upon this work a long training and experience in the practice of medicine and surgery and an accurate knowledge of anatomy, physiology and pathology. The combination of these acquirements rendered his radiologic interpretation of unusual and immeasurable value to the physician and surgeon by this added aid in indicatory proximate guides for action.

He was far more than a mere roentgen ray technician. He realized and shared the responsibilities of a full consultant in every case referred to him. He readily gave his opinion as a clinico-radiologist to those who desired and appreciated it.

His comprehensive and exact knowledge of radiology in its entirety, his meticulous care, his precision of thought and clarity in the expression of it, his intense and unflagging zeal placed him in the forefront of America's greatest roentgenologists, and as such he was nationally recognized.

True to his innate honesty of mind, he ill brooked even the slightest departure from truth or the evasion of it. He was dominated by a well ordained pride. Proud of his profession and its dignity, proud of being a gentleman, he bore throughout his life the noble obligations of these prides fearlessly and unsullied to the end. Though unyielding, adamant, unflinching in these prides when the principles of right doing and right thinking were involved, nevertheless humility and simplicity were equally characteristic of him. Those who knew him well recognizing his kindness of heart, his keen, sensitive, responsive nature could but hold for him a sincere and respectful affection. Unbounded in his charity he gave unstintingly of his skill and experience to the humblest of his patients with tact, consideration and delicacy.

For fifteen years or more he gave his services gratuitously to Mount St. Rose Sanatorium with such zeal and unswerving attention that he gained the undying gratitude and affection of all connected with that institution. In his long service at the Lutheran Hospital and in his private practice he inspired the same regard from

all with whom he came in contact. If prudence be the right order and right reasoning in things to be done or undertaken; if justice be the habit of the mind and the will of giving everyone his due; if fortitude means courage to withstand persistently the physical and mental onslaughts of life, and fearlessly to attack when necessary; if temperance means moderation and restraint—then Dr. Kessler possessed these cardinal virtues to an eminent degree.

He not only possessed these habits of mind and heart but was guided by them in his every personal and professional act. By the continuous practice of these acquirements Dr. Kessler demonstrated beyond cavil that great, true and worthwhile success in the profession of medicine can be attained *only* by an intimate and indissoluble merging and comingling of the intensely practical and the truly idealistic in the art and science of medicine. This is the ennobling and inspiring heritage he has bequeathed to us.

To Mrs. Kessler and those most intimately associated with him in life the sincerest sympathy of the whole membership of the St. Louis Medical Society is respectfully tendered.—L. C. B., in the *Bulletin* of the St. Louis Medical Society.

WILLIAM J. LANGAN, SR., M.D.

It has been said that generals win wars but soldiers win battles. So too the battles waged by our profession against disease and death are fought by the men in the ranks. We too have our boards of strategy who plan out methods and our staff officers who point out the way, but it is the modest everyday practitioner who marches to the front and actually comes to grips with the enemy. Many are the Unknown Soldiers among our brethren who have laid down their lives in the performance of their duty.

Dr. Langan well illustrated this type. He did not seek fame or the applause of the world of science. His ideals were:

Faith, Honor, Duty. Duty calmly done,
That shouts no self-praise o'er the victory won.

He was a fine example of the competent and conscientious practitioner who is satisfied to spend his days relieving suffering, increasing usefulness and saving life—surely no mean ambition.

Dr. Langan was born December 10, 1850, at Shackleford, Saline County, Missouri. He was one of thirteen children of Michael and Mary Moran Langan, and thus like so many of the most valuable persons in the world, was one of a large, rather than of a small family. His par-

ents emigrated from Charleston, South Carolina, and founded the original settlement of Shackleford in 1840. He was educated at St. Benedict's College, Atchison, Kansas. Coming to St. Louis in 1873, he obtained his medical degree from the Missouri Medical College on March 4, 1875. He was married in 1877 to Miss Margaret McGowan who survives him with their three daughters and four sons. Among the latter is our fellow member, Dr. William J. Langan, Jr.

Dr. Langan was always a hard worker, and ever methodical and punctual. Ever a deeply religious man, he lived his creed on week days as well as Sundays and was kind and helpful to the poor. He was connected with St. John's Hospital clinic when that institution was at Twenty-second and Morgan Streets. He was president of the St. Louis Medical Society in 1897, and at the time of his death was our oldest living ex-president.

Dr. Langan continued active in general practice until about seven weeks before his death which occurred on May 22, 1933, at his home at 5803 Plymouth Avenue, the result of a myocarditis of about one year's duration. Like Job, "He died, an old man, and full of days."

"And thou shalt go to thy fathers in peace, and be buried in a good old age." Gen. 15:15.—J. G., in the *Bulletin* of the St. Louis Medical Society.

EDGAR ARMISTEAD DULIN, M.D.

Dr. E. A. Dulin, Nevada, a graduate of Georgetown University School of Medicine, Washington, D. C., 1865, died May 16 at the home of his daughter in Bartlesville, Oklahoma, after a long illness. He was 89 years old.

Dr. Dulin was born December 19, 1843, in Washington, D. C., his parents having moved there from Virginia. He was educated in the schools at Washington and in 1865 was appointed a medical cadet in an army hospital serving in that capacity for several months until his graduation from Georgetown University. The commencement exercises at which he received his medical degree were held in Ford's Theater just six weeks before President Abraham Lincoln was assassinated.

After his graduation, Dr. Dulin was appointed an assistant surgeon in the navy, joining the U. S. S. Don as medical officer. This ship was the flagship of the Potomac flotilla during the Civil War.

After several years of service in the navy Dr. Dulin resigned and began his private practice. He came to Missouri in 1869 and to Nevada in 1882. For many years he was one of the city's

most prominent physicians. He was mayor for three terms and for several years served the city as health officer.

Dr. Dulin was a loyal member of organized medicine. He was president of the Vernon-Cedar County Medical Society in 1926 and was delegate to the State Meeting in 1924. He was elected an Honor Member in 1926.

He is survived by one son and a daughter.

ALBIN MONROE PAINTER, M.D.

Dr. Albin Monroe Painter, Kansas City, a graduate of St. Louis University School of Medicine, 1905, died at Research Hospital in Kansas City, May 19, of heart disease. He was 51 years old.

Dr. Painter was born in Council Groves, Kansas, the only son of Dr. and Mrs. Dickson H. Painter. He attended the schools in Council Groves and took the first part of his medical work in the University Medical College of Kansas City. Soon after his graduation he began his practice as a general practitioner of medicine and surgery in Parsons, Kansas. In 1912 he took special work in New York in otolaryngology and practiced for several years in Youngstown, Ohio, restricting his work to otolaryngology.

He served in the World War with the rank of major. After his discharge from the army he located in Kansas City where he rapidly took a leading position in the medical profession.

Dr. Painter was a member of the Jackson County Medical Society, the State Association and the Kansas City Society of Ophthalmology and Otolaryngology. He was on the staff of the Research Hospital.

Dr. Painter was a man of high ideals and lived up to them. He was ever sincere and loyal and had the confidence and respect not only of the medical profession but of everyone with whom he came in contact.

He is survived by his widow, Mrs. Katherine Painter, and one daughter.

WILLIAM M. ROBERTSON, M.D.

Dr. William M. Robertson, St. Louis, affectionately called "Daddy" Robertson by many of his friends, died in Barnes Hospital after a long illness, June 6. He had suffered for some time from heart disease and contracted pneumonia which caused his death. He was 67 years old.

Dr. Robertson was born in Fayette, Alabama. He began his medical education in the University of Virginia School of Medicine receiv-

ing his degree in 1889 and followed this by specialized study in urology in several hospitals and schools in Europe. He soon began his practice in St. Louis and became allied with the St. Louis Medical Society in 1900.

He was acknowledged to be a philosopher and a gentleman, a true product of the old South. Always polite, meticulous in the use of "Sir" even with his intimates, he illustrated a type of Southerner now rapidly disappearing. He pursued the even tenor of his way becoming much absorbed in his later years in philosophy. He was a man whom his many friends will miss.

He is survived by a sister and a brother.

M. A. B.

HENRY J. SCHERCK, M.D.

On March 29, Henry J. Scherck, St. Louis, died at the age of 65 years. For at least a year prior to the time he took to his bed he had been in failing health. Devotion to his work, the habit of a lifetime, kept him from taking care of himself. He refused to lead the life of an invalid and kept going until his physical strength completely failed him.

A child of the southland, his forbears had for several generations been leaders in community activity. So, when he came to St. Louis to practice the profession for which he was so well prepared he was not content merely engaged in private practice. He felt the urge to be among the leaders in communal and social work. Thus he was chief dispensary physician during the active period of the Louisiana Purchase Exposition. Largely through his efforts pure milk clinics were established and pasteurized milk made available for the children of parents of small means. He became an active member of the staffs of several of our leading hospitals, he built up a large private practice and he was on the faculty of one of our medical schools, teaching in his special field. He contributed to medical literature as author and editor, and he was active in the general and special societies to which he belonged. His enthusiasm for medicine was unflagging and contagious.

He had a capacity for friendship that was unusual. Many a lay friend was bound to him with hoops of steel. He gave advice and moral support to many who sought him originally as medical guide and who learned to value him for his loyalty, his hard common sense and his willingness to serve.

In those more intimate relationships, as husband and father, which shun the light of publicity he lived up to the highest ideals of all times. The devoted companion of the ripper

years of life followed him out of this life a scant fortnight after his departure. It was almost as if, deprived of him, she was willing, nay eager, to relinquish life. To his children he leaves the precious heritage of a life well spent.

L. S. in the *Bulletin* of the St. Louis Medical Society.

MARION EATON SPURGEON, M.D.

Dr. Marion Eaton Spurgeon, Red Bird, a graduate of the Beaumont Hospital Medical College, St. Louis, 1901, died May 7 in Barnes Hospital, St. Louis, following a gallbladder operation. He was 54 years old.

Dr. Spurgeon was born in Gasconade County and received his early education in the public schools and at the Steelville Normal School. After completing his medical education he located at Red Bird and continued in active practice there until his death.

He was a Fellow of the American Medical Association and was active in county and state medical societies. He was president of the Gasconade-Maries-Osage County Medical Society in 1925 and again in 1932 and was secretary-treasurer in 1929. He was a delegate to the State Meeting in 1923, 1929 and 1932.

He was always willing and ready to aid the sick and in addition was a leader in many of the enterprises of the community. He was recognized as a man of integrity, honesty and sterling worth as a physician, citizen and friend.

He is survived by his widow, Mrs. Mattie Spurgeon, and eight children.

KATHERINE B. RICHARDSON, M.D.

Dr. Katherine B. Richardson was an optimist, a prophet, a humanitarian, a philanthropist.

She was the leading woman citizen of Kansas City and was always intimately identified with civic activities. She was unfortunately denied the sacred privilege of being a mother in the technical interpretation of the word. She accepted the inevitable, philosophically, and as a result of this denial she chose to become the "big" mother to thousands of crippled underprivileged children in the great Southwest.

She made the observation early in her life that physical defects, especially those known as harelip and cleft-palate, contribute materially to the development of an inferiority complex in the afflicted child. This unfortunate and frequent condition appealed to her so strongly that she concentrated her efforts and skill in the correction of this particular facial deformity. As a result of her persistence and energy, she became nationally known as a plastic surgeon.

Each year she gave a program before the Jackson County Medical Society, occupying the entire evening, which was always accepted with acclaim.

Her motto might well have been: Come unto me little children and I shall correct your physical defects and make you happy and useful citizens.

She always stood in the shadows except when it became necessary to defend or provide for her dream child, then, according to Dr. R. McE. Schauffler, who was associated with her for thirty years, she became a "fighting saint."

Dr. Richardson had the sincerity of a martyr, the urge of a pilgrim and the conviction of a scientist. Many eulogistic prayers or flattering adjectives would not meet with her approval and would deflate her real value which is definitely established.

She has erected an enduring monument to her name in Mercy Hospital that Kansas City and its environs will not soon forget. Kansas City feels as Mark Antony expressed himself at the burial of Cæsar, "My heart is in the coffin there with Cæsar, and I must pause 'till it come back to me.'"—From the Jackson County Medical Journal.

TENSIONS BROUGHT ABOUT BY TRAUMATIC EVENTS DIFFER

"Economic losses are only specific instances of a larger category of external events, known as traumatic events. These are external stimuli, which, if the personality is exposed to them, create inner tensions which the mental apparatus cannot resolve. In the case of a financial loss or sudden unemployment the tensions which are called forth are manifold, such as fear of the future, a great sense of insecurity, loss of self esteem, deprivations and resulting discontent," according to Dr. Franz Alexander, expressing his opinion in the March *Hygeia* on the relationship between emotional reactions and economic depression.

"The precise and detailed investigation of individual cases by the method of psychoanalysis shows that the reactions of different persons to similar situations varies to a great extent," he continues.

Because of a large number of paradoxical cases in which the economic depression tends to improve an existing neurotic disturbance, in contrast to those cases aggravated by economic misfortune, it is hard to foretell whether by putting a great number of people into difficult life situations the economic depression will tend in general to increase or to diminish the incidence of manifest mental disorders.

Statistical curves do not show any definite relation between economic depression and suicides.

"Apart from the depression," Dr. Alexander concludes, "I think there are other factors operating in modern civilization which are responsible for the incidence of mental disturbances. . . . According to my experience the increasing mechanization and rationalization of labor and professional life is the most important factor in causing an inner discontent in the population, which is the most general factor in mental disturbances."

SOCIETY PROCEEDINGS

COUNTY SOCIETY HONOR ROLL FOR 1933

(UNDER THIS HEAD WE LIST SOCIETIES WHICH
HAVE PAID DUES FOR ALL THEIR MEMBERS)

HONOR ROLL

Mercer County Medical Society, December 10, 1932.

Moniteau County Medical Society, January 13, 1933.

Ste. Genevieve County Medical Society, January 19, 1933.

Camden County Medical Society, January 20, 1933.

Dent County Medical Society, February 1, 1933.

Chariton County Medical Society, February 10, 1933.

Webster County Medical Society, July 8, 1933.

BUCHANAN COUNTY MEDICAL SOCIETY

The regular scientific session of the Buchanan County Medical Society was called to order by the president, Dr. W. H. Minton, in the Missouri Methodist Hospital, May 17.

The guest of the evening was Dr. Frank R. Teachenor, Kansas City, who delivered an address on "Brain Tumors." He handled his subject in a very able manner and lantern slides helped to fix his points in the minds of his very appreciative audience.

This being a strictly scientific session there was no business transacted except the reading of the minutes of the two previous meetings.

Meeting of June 7

The regular business meeting of the Buchanan County Medical Society was called to order in the Missouri Methodist Hospital by the president, Dr. W. H. Minton.

The application of Dr. Collis I. Roundy for provisional membership in the Society was read and referred to the Board of Censors.

Drs. Floyd H. Spencer and John Stamey, the delegates to the State Meeting, gave their impression of what took place in the House of Delegates. It was their belief after attending this meeting that if this Society desires the annual dues reduced it should be cut off the local dues and not off the state dues. They think that the amount of work carried on by the State Association, which is very valuable to all members, cannot be successfully done should the dues of \$8.00 per year be cut down. They advised that if the Society wants the dues reduced that, beginning January 1, 1934, and until the depression is over, the \$2.00 Home Trust Fund fee be abandoned.

Dr. Stamey moved, seconded by Dr. Webb, that the president appoint a committee of three to investigate the advisability of drafting an amendment to the By-Laws which would suspend temporarily the payment annually of the \$2.00 Home

Trust Fund. This motion carried and Drs. Spencer, Stamey and Charles Geiger were named.

Dr. H. DeLameter, representing Mrs. Julia Woodson Edmons, daughter of the late Dr. C. R. Woodson, invited the Society to a chicken dinner to be served at the first meeting in September. The invitation was unanimously accepted.

Meeting of June 21

The regular scientific session of the Society was held at the St. Francis Hotel at 6:15 p. m. After partaking of a splendid dinner the meeting was called to order by the president.

The application for provisional membership of Dr. Collis I. Roundy was voted on by ballot resulting in seventeen votes being cast for the candidate and eighteen votes against.

Dr. L. H. Fuson, St. Joseph, spoke on "Some Neutropenic States, Including Report of Nine Cases of Agranulocytic Angina." The lecture was accompanied by lantern slides. This was a splendid address and was listened to attentively. Much credit is due Dr. Fuson for the great amount of time and study that he has devoted to this disease which has puzzled many physicians.

The paper was discussed briefly by Dr. E. M. Shores.

There being no further business the Society was adjourned until after the vacation interim, the next meeting to be held September 6.

EMMETT F. COOK, M.D., Secretary.

CAPE GIRARDEAU COUNTY MEDICAL SOCIETY

The Cape Girardeau County Medical Society met at Jackson on May 8 with Dr. M. H. Shelby, Cape Girardeau, president, in the chair.

Members present: Drs. B. W. Hays and G. W. Vinyard, Jackson; M. H. Shelby, Asa Barnes, H. V. Ashley, O. L. Seabaugh, D. I. L. Seabaugh, W. H. Wescoat, B. A. Wilkes, J. H. Cochran, H. L. Cunningham, G. B. Schulz and C. A. W. Zimmermann, Cape Girardeau.

A letter from Dr. Neil S. Moore, St. Louis, offering to display his moving picture "Technic of Caring for Bladder Neck Obstructions" before the Society at any convenient time was read. Dr. Cochran suggested that this be accepted at some future time when the audience would be larger than it might now be because of the numerous recent programs.

Prompted by a letter from Dr. John Van Cleve, secretary of the Southeast Missouri Medical Society, desiring to know what entertainment the Society would offer that society on the first evening of its meeting in Cape Girardeau next October, Dr. Schulz moved that an entertainment along nonprofessional lines be offered; Dr. Cochran seconded and the motion carried. Dr. Shelby appointed Drs. Cochran, Schulz and Hays as a committee to arrange a program.

Dr. B. A. Wilkes discussed at length the "Hospital Group Plan" and urged that our members give it serious consideration and support. Dr. J. H. Cochran, also at length, voiced his emphatic opposition to the plan, the essence of his discussion being that the plan was just one more to exploit the profession.

The transfer card of Dr. B. A. Wilkes from the St. Louis Medical Society to the Cape Girardeau County Medical Society was presented.

The application for membership of Dr. Asa Barnes was received. Both application and transfer card were accompanied by the endorsement of the board

of censors and a unanimous vote was cast for admission of the doctors.

Dr. W. H. Wescoat read a paper on "Procedentia Uteri" which was discussed by Drs. Schulz, Hays and Cochran.

Dr. G. D. Seibert, Jackson, the next essayist on the program was absent on account of illness and Dr. G. W. Vinyard was called upon to fill in; nor did the octogenarian fail the Society. In an eloquent manner he compared the older methods of accouchement with the newer. He decried especially the use of modern "powerful pharmaceuticals" which produced rapid delivery and recommended leaving the process of labor to mother nature. If delay became too prolonged, he recommended the operation of "quilling" which he assured would aid the vertex over the perineum. (Mirth.) He also suggested that a cough was a valuable reflex aid to women under certain circumstances. (More mirth.)

C. A. W. ZIMMERMANN, M.D., Secretary.

CASS COUNTY MEDICAL SOCIETY

The Cass County Medical Society held its regular quarterly meeting at the office of Dr. M. P. Overholser, Harrisonville, June 8, with Dr. H. A. Brierly, Peculiar, president, in the chair.

The Society offered its services in examining members of the 4-H clubs of Cass County as it did last year.

Dr. Wm. Beckman, Strasburg, spoke on "Empyema," presenting his subject in an understanding manner and with much credit to himself. Everyone present took part in the discussion and several case histories were presented.

Dr. H. S. Crawford, Veterans' Administration, Kansas City, spoke on "The Cass County Medical Society," relating some of the early experiences of his medical career. He joined the Society in 1905 and served as its secretary for twelve years beginning in 1909, except from October, 1917, to June, 1918, which interval was served by Dr. D. S. Long. Dr. Crawford called the roll of the membership of 1905 which disclosed the passing on of many of those revered physicians of more than a quarter of a century ago.

The Cass County members present were Drs. T. W. Adair, Archie; Wm. Beckman, Strasburg; H. A. Brierly, Peculiar; H. S. Crawford, Kansas City; L. V. Murray, Pleasant Hill, and M. P. Overholser and J. S. Triplett, Harrisonville. Drs. O. B. Hall and L. J. Schofield, Warrensburg, were welcome visitors.

J. S. TRIPLETT, M.D., Secretary.

CLAY COUNTY MEDICAL SOCIETY

The June festival meeting of the Clay County Medical Society was held at the Odd Fellows Hospital in Liberty, June 29.

A splendid, substantial, home-like spread including country ham, fried chicken and southern style biscuits was served by the girls of the institution. Dr. J. J. Gaines, on behalf of the Society, expressed appreciation for the almost "home-coming" event. Mr. Rogers, superintendent of the hospital, responded with words of welcome to the Society and its friends. Approximately thirty members and their wives were present.

Dr. C. J. Hunt, Kansas City, performed a right inguinal hernia operation under local anesthesia also taking out the appendix. The patient seemed to enjoy the proceedings.

Dr. J. W. McKee, Kansas City, conducted an eye clinic and Dr. R. E. Teall, Kansas City, did some nose and throat work.

The session was a busy, instructive, professional meeting with no business transacted.

The next meeting will be in Excelsior Springs in October.

J. J. GAINES, M.D., Secretary.

DALLAS-HICKORY-POLK COUNTY MEDICAL SOCIETY

The regular monthly meeting of the Dallas-Hickory-Polk County Medical Society met at Buffalo, June 6. The meeting was called to order by the vice president, Dr. R. E. Harrell, Urbana.

Members present were Drs. H. G. Savage, Warsaw; R. E. Harrell, Urbana; G. C. Plummer and V. H. Greenwood, Buffalo; L. A. Glasco, Hermitage; J. W. Murray, Quincy; J. L. Johnston, Wheatland; J. M. Edwards, Cross Timbers; C. V. Steward, D. E. Hammondtree, D. C. McCraw, J. F. Roberts, Bolivar; C. H. Brown, Fair Play; R. C. Nevins and A. J. Stufflebam, Humansville. Guests present were Drs. Guy Callaway and E. L. Cartwright, Springfield; H. J. Harrell, Morrisville, and T. D. Wrinkle, Half Way.

Our guests from Springfield came as lecturers. Dr. Cartwright presented a paper on "Prenatal Care, Delivery and Postnatal Care of Normal Obstetrical Cases." He reviewed the care a baby girl should have from the time of her birth to motherhood from the obstetrical point of view.

Dr. Callaway spoke on "Coronary Occlusion." He reviewed the anatomy, pathology, symptoms, treatment and differential diagnosis of coronary occlusion.

Both lectures were well presented and interesting and instructive. Every member appreciated immensely the valuable information each speaker brought.

The Johnson Drug Store served lemonade between lectures and Drs. Greenwood and Plummer entertained following the meeting with an excellent chicken dinner.

J. L. JOHNSTON, M.D., Secretary.

GREENE COUNTY MEDICAL SOCIETY

The Greene County Medical Society met in regular session in the Public Library, May 12, with the president, Dr. J. H. Fulbright, Springfield, in the chair.

Dr. Paul O. Upshaw, Springfield, delivered an address on "Anesthesia in Obstetrics." The various indications, advantages and disadvantages of anesthetics which may be used in obstetrics were discussed including ether, chloroform, ethylene, nitrous oxide, morphine, scopolamine, spinal anesthesia, local infiltration and Gwathmey's rectal installation method.

Twenty-five members attended the meeting.

Meeting of May 26

The meeting was called to order by the president, Dr. J. H. Fulbright, Springfield.

Dr. B. Landis Elliott, Kansas City, was the guest of the Society and delivered an address on "Newer Developments in the Treatment of Epilepsy." He stressed the need of a thorough physical examination including roentgen ray and laboratory work in these cases in attempting to ascertain the cause. He mentioned endocrine disturbances and hyperinsulinism as causative factors.

Beside the ordinary treatment by use of drugs such as luminol, bromides, etc., he discussed the use of the ketogenic diet and water restriction. A general discussion followed.

Twenty-three members were in attendance.

Meeting of June 9

Dr. C. H. Max Fitch, Springfield, spoke on "Nonspecific Protein Therapy."

Dr. D. L. Yancy, Springfield, spoke on "Treatment of Compressed and Impacted Fractures of Vertebrae." Roentgen ray pictures were used to illustrate the cases.

Attendance was twenty-seven.

J. NEWTON WAKEMAN, M.D., Secretary.

JASPER COUNTY MEDICAL SOCIETY

The Jasper County Medical Society held an informal session at the Drake Hotel, Carthage, on May 9.

After a very enjoyable and bounteous meal the meeting was turned over to Dr. L. B. Clinton, Carthage. The Carthage members of the Society had prepared a very interesting and instructive program.

Dr. E. J. Burch, Carthage, read an interesting essay comparing the trials of young physicians fifty years ago with those of the present day.

Dr. Baker, Mayor of Carthage, addressed the Society welcoming them to the city.

Three cases were presented, respectively, pernicious anemia; anterior dislocation of the second cervical vertebra, and esophageal abscess.

Between the presentation of these cases the Society was entertained by an excellent Negro quartet and a comedy duet.

The president, Dr. M. O. Coombs, Joplin, thanked the Carthage group in behalf of the Society for their hospitality.

Meeting of May 16

The Jasper County Medical Society met at Joplin May 16 with twelve members present.

A communication from Dr. C. T. Reid, Joplin, thanking the Society for flowers sent him during his illness was read.

Dr. W. M. Kinney, Webb City, was unanimously elected a member of the Society.

Dr. R. L. Neff, Joplin, reported on the illness of Dr. Harry A. Leaming; Dr. R. M. James reported on the progress of the illness of Dr. Ed. James, and Dr. Paul W. Walker reported on Dr. Reid's progress.

The meeting was turned over to the health commissioner, Dr. Clark, who presented the program. Mr. Trusty reported the activities of the department of sanitation; Mrs. Hoshaw reported for the health and welfare association, and Dr. R. M. James, city physician, reported on his activities. Dr. Clark closed the discussion stating that the health department is seriously handicapped by an inadequate budget.

It was decided that another regular meeting be held and that Dr. Frank I. Ridge, Kansas City, be invited as the speaker of the evening.

Meeting of May 23

The Jasper County Medical Society met May 23 with thirty-four members and six visitors present.

The chairman appointed Dr. A. J. Chenoweth and Dr. Allen B. Clark as a committee on arrangements for the annual spring dinner for the doctors and their wives.

Dr. L. B. Clinton, Carthage, introduced the guest of the Society, Dr. Frank I. Ridge, Kansas City, who spoke on "The Practical Application of Endocrinology."

The paper was discussed by Drs. O. T. Blanke, Frances E. Rosenthal, R. M. James, John W. Hardy and W. L. Post, of Joplin, and George H. Wood and Homer E. Byrd, of Carthage. Dr. Ridge closed the discussion.

PAUL W. WALKER, M.D., Secretary.

NODAWAY COUNTY MEDICAL SOCIETY

The Nodaway County Medical Society met at the St. Francis Hospital, Maryville, May 12, with Dr. R. C. Person, Maryville, presiding.

Members present: Dr. J. M. Boyles, Conception Junction; Dr. Charles D. Humbert, Barnard; Drs. C. T. Bell, Hiram Day, L. E. Dean, Loren E. Egley, C. V. Martin, R. C. Person, Jack Rowlett, and Wm. M. Wallis, Jr., Maryville. Guests: Drs. Paul V. Woolley and D. A. Williams, Kansas City; Dr. S. E. Simpson, Stanberry; Drs. Earl Braniger, E. L. Enis, Jesse Miller, W. B. Owen and H. L. Stinson, dentists, of Maryville, and five sisters from the hospital staff.

Dr. Charles D. Humbert, Barnard, delegate, gave a brief report on the Annual Meeting of the State Association at Kansas City, May 1 to 4.

The scientific program for the evening was furnished by the Kansas City guests who had come as essayists through the courtesy of the Postgraduate Committee of the State Association.

Dr. Paul V. Woolley read an excellent paper on "The Treatment of Anorectal Disease." The doctor's own handling and routine office treatment of ambulatory cases of anal disorders, especially hemorrhoids, were given in detail and were very much appreciated. The paper was discussed by Dr. Dean.

Dr. D. A. Williams spoke on "Lesions of the Esophagus," giving especial attention to cardiospasm and its accompanying esophageal dilatation and a resumé of all therapeutic measures of value in this condition. He gave details of treatment and showed a specimen of the elastic pressure bag which he prefers to all other curative measures. His discourse was well illustrated with case histories and with lantern slides of radiographs. This essay was discussed by Drs. Humbert, Rowlett and Martin.

On motion of Dr. Humbert, Dr. Braniger as "straw boss" was called to the floor for a discussion of plans for the regular Doctors-and-Dentists monthly banquets during the summer. It was decided to discontinue these meetings until autumn.

A third part of the program, *cibus prandeo allemanda cum potus cerevisia tres punctum duo, benevolentia Sororibus*, was much enjoyed by all present.

CHARLES D. HUMBERT, M.D., Secretary.

ST. LOUIS COUNTY MEDICAL SOCIETY

The St. Louis County Medical Society met May 10 at the St. Louis County Hospital, Clayton.

A resolution was adopted on the death of Dr. E. A. Scharff.

Dr. T. R. Usher was elected to active membership.

Dr. Joseph P. Costello, St. Louis, presented a report of a case of rabies in a human, illustrated with lantern slides.

Meeting of May 23

An adjourned meeting was held May 23 at the St. Louis County Hospital.

Dr. A. Victor Reese, Webster Groves, was elected to membership by transfer from the St. Louis Medical Society.

A resolution relative to the rabies situation in St. Louis County was adopted.

Dr. Norman Tobias, St. Louis, presented a lantern

slide demonstration of "Extragenital Syphilitic Lesions."

A general discussion of medical economics followed.

O. P. HAMPTON, JR., M.D., Secretary.

WRIGHT-DOUGLAS COUNTY MEDICAL SOCIETY

The Wright-Douglas County Medical Society met at Mountain Grove June 15 at noon for dinner. The following members and visitors were present: Drs. Guy D. Callaway and Forrest A. Harrison, Springfield; J. C. B. Davis, Willow Springs; J. A. Fuson, Mansfield; J. M. Hubbard, H. G. Frame, R. W. Denney, R. A. Ryan and A. C. Ames, Mountain Grove.

Following the dinner the group went to the Cameo Theater for the scientific program.

Neither the president nor vice president being present, Dr. Ames, the secretary, presided.

It was voted to delay the election of officers, which was postponed from last fall, until next fall at the regular election time and to hold over all officers for the present.

Dr. Callaway gave a most excellent address on "Sclerosis, Embolism and Thrombosis of the Coronary Arteries," which explained the cause of many sudden deaths.

Dr. Harrison spoke on "The Treatment of Summer Diarrheas," giving some of the newer methods being used by the more successful pediatricians.

It was the opinion of all present that the meeting was one of the most instructive the Society has had in a long time and a vote of thanks was extended to Drs. Callaway and Harrison for their efforts.

Dr. Davis discussed trying to arrange a joint meeting of the Wright-Douglas County Medical Society and the Howell-Oregon-Texas County Medical Society at Cabool or Willow Springs in the near future.

The meeting adjourned at 4 o'clock with a vote of thanks for the use of the theater.

A. C. AMES, M.D., Secretary.

WOMAN'S AUXILIARY

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

12th Annual Meeting, Cleveland, 1934

President, Mrs. James Blake, Hopkins, Minnesota.

President-Elect, Mrs. Robert W. Tomlinson, Wilmington, Delaware.

WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION

Tenth Annual Meeting, St. Joseph, 1934

President, Mrs. Hudson Talbott, St. Louis.

President-Elect, Mrs. Wm. H. Goodson, Liberty.

Advisory Council, Dr. J. F. Harrison, Mexico.

Officers 1933-34

President, Mrs. Hudson Talbott, St. Louis.

President-Elect, Mrs. Wm. H. Goodson, Liberty.

Treasurer, Mrs. Paul Cole, Springfield.

Recording Secretary, Mrs. Stanley P. Howard, Jefferson City.

Corresponding Secretary, Mrs. Frank L. Davis, St. Louis.

Auditor, Mrs. O. H. Callaway, Nevada.

1st Vice President, Mrs. Ola Putman, Marceline; 2nd Vice President, Mrs. James Stowers, Kansas City; 3rd Vice President, Mrs. Wm. R. Patterson, Warrensburg; 4th Vice President, Mrs. G. B. Schulz, Cape Girardeau.

Directors (1 year): Mrs. Wilbur Baker, Kansas City; Mrs. Reuben Barney, Chillicothe; Mrs. James Barger, Albany; Mrs. E. L. Johnston, Concordia; Mrs. C. M. Sneed, Columbia. (2 years): Mrs. Otis O. Ash, Moberly; Mrs. Geo. A. Aikin, Marshall; Mrs. W. C. Cheek, Springfield; Mrs. Clarence A. Good, St. Joseph; Mrs. Francis Reder, St. Louis.

Chairmen of Standing Committees: Program, Mrs. David S. Long, Harrisonville; Hygeia, Mrs. John Zahorsky, St. Louis; Revisions, Mrs. C. T. Ryland, Lexington; Essay Contest, Mrs. Wm. H. Goodson, Liberty; Public Relations, Mrs. Floyd Spencer, St. Joseph; Finance, Mrs. R. C. Haynes, Marshall; Press and Publicity, Mrs. M. P. Overholser, Harrisonville; Archives, Mrs. M. Pinson Neal, Columbia, and Legislation, Mrs. A. H. Baldwin, Pleasant Hill.

The Summer Slump

It is a pleasure to precede this message to you with the list of my supporting officers, directors and committee chairmen. These good aids are supposed to be immune to the "Summer Slump." I bespeak for their efforts at all times your hearty cooperation in furthering the worthy aims of this Auxiliary.

There is a habit in organization life of making the last meeting before the summer vacation a grand climax of our climbing. We have a feeling that the goal is reached, the task finished, then we let all holds go and drop back to "The Valley of the Beginning" to start again next fall from the same place. I grant you the summer's rest is needed and well deserved but let's not lose the ground gained during the last months of active service. The year's work is not a finished journey, it is but one lap of the journey before us.

There are ways, even while we pause for the summer's rest of body and nerves, whereby we may not only hold this year's gain, but lay the wires for a forward move in the fall.

Those who are fortunate enough to escape Missouri's heat at seaside and mountain resorts, may gather lovely ideas for Auxiliary programs and scatter abroad the Auxiliary gospel of "Health Education Through the Medical Profession." Those of us who remain at home because collections are poor or the Smiths' and Jones's babies are expected, will have a beautiful opportunity for reading the things pertaining to our Auxiliary which we have wanted to know about all these months and to prepare a health talk which you may be asked to make at the Parent-Teachers or Public Relations meeting. We may be gathering material bearing on next year's topic for Auxiliary study. This topic, "Responsibility of National, State and Local Government for Health Promotion," will also be used for another Student Essay Contest.

And let us not neglect our social opportunities. Cultivate a doctor's wife who has not been interested and have a new member for your County Auxiliary at the first fall meeting, or get your Auxiliary families together for a picnic and general good time. Every such occasion stimulates the spirit and loyalty in your Medical Society.

I sincerely wish every member of our Auxiliary a happy and fruitful summer.

MRS. HUDSON TALBOTT.

High Lights from the Milwaukee Session of the Auxiliary to the A. M. A.

Entertainment was perfect.

Mrs. James F. Percy presided.

Attendance was 942.

Finances reported in excellent condition.

Advisory Council A. M. A. advised postponing the adoption of revised constitution for one year.

Missouri leads in *Hygeia* subscriptions, numbering 568.

Mrs. David S. Long of Missouri becomes national chairman of public relations; and Mrs. Willard Bartlett becomes historian.

MISCELLANY

TESTIMONIAL DINNER TO DR. ARTHUR R. McCOMAS

Kansas City, May 2, 1933

REMARKS OF SPEAKERS

Dr. Jabez N. Jackson, Kansas City, Toastmaster

The Qualities of McComas Which Have Yielded to Him Satisfaction and Insured to Him Success in His Calling

THE TOASTMASTER: I want to express my appreciation of the very distinguished opportunity I have of presiding over this dinner given for Dr. McComas. We have been associated very intimately for many years in the life and activities of this Association and I have learned to esteem him and to love him.

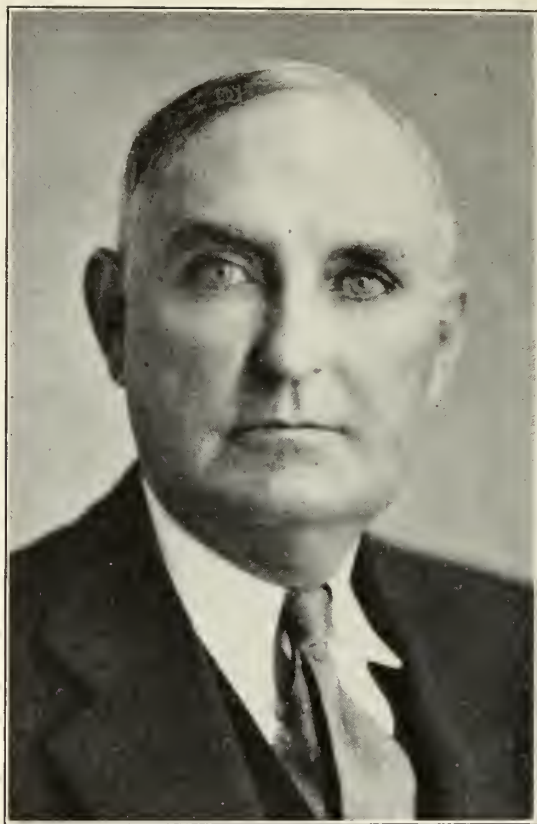
Last fall during the clinics in Kansas City I had the pleasure of having a dinner something like this given for me at the old University Medical College of Kansas City and Dr. C. G. Toland, Los Angeles, asked me to say a few words. I will say to you what I said to them: "Boys, I thought I tried to raise you to be honorable, to tell the truth. I have never listened to such a wholesale bunch of liars as you are!" Now I realize that there are many others of the same sort here tonight. All I will say is, go ahead and lie as hard as you can. He will like it, as I did; he will be tickled to death.

The first speaker is his old side pal. Probably no two men have had more to do with the building up of the Missouri State Medical Association than these two. We are fortunate in having at the helm two such men as these. Speaking as one rascal to another, I will ask Dr. Goodwin to tell the truth about Dr. McComas.

His Official Connection With Organized Medicine

DR. E. J. GOODWIN, St. Louis: I do not know that I ever did tell the truth, and I cannot tell all the truth on this special occasion, but I want to say a few words that resemble the truth, anyhow.

My first contact with our honored friend, I do not recall, but it was a happy day for me. His official connection with our organization I think dates from the moment he was admitted to fellowship in the Association. He has held honors not only in his own local society from beginning to end, all of them, and they still think well of him; but he has held honors in the State Medical Association. All we had to give we gave. He never sought distinction, nor did he



DR. A. R. McCOMAS

ever run away from responsibility. While he was President of our Association our State fell into disgrace and gained a lot of notoriety the world over regarding our State Board of Health and its activities. He brought us through that all right. He came to St. Louis and under the influence of his powerful work he did much to protect the profession. He has made a place in our hearts, silently, and with us, hardly realizing it ourselves. I think it is because he had a father who was a fine gentleman, one of the most highly respected physicians of our State, and he had a marvelous mother. With that combination what could be expected except a man who will bear all the honors given him and never accept one without performing the duties which it entails. And he with three or four others whose faces are before me now learned much, I believe, from another physician who sponsored him, who taught him and vouched for him, and who also played the same role—Dr. Frank J. Lutz. When that dear old man died we lost our leader. When he died and Arthur was advanced to the chairmanship of the Council Mc came to my office after the funeral and we talked things over and I said, "Mc, here is something I would like to talk over with you; I do not know what to do." He said, "Eddie, don't ask me to give any opinion right now. I have not used my brain for so long that I will have to begin and learn how."

McComas in Public Life

MR. DON CARTER, Surgeon: Members of the Missouri State Medical Association: I am very grateful, indeed, to those who made it possible for me to be

here tonight to lift my voice in appreciation of my lifelong friend and neighbor, Dr. McComas. When I learned that I was to be one of the speakers I thought of a thing that happened in our home town years ago.

We were having a great Methodist revival and as Methodists will do the various brothers and sisters were called on during the meeting to testify what the Lord had done for them. After most of the brothers and sisters had given their testimony there was a lull in the proceedings and it seemed that everyone had spoken. Finally the preacher looked over in the corner and said, "Brother Brown, will you not tell us what the Lord has done for you?" A very old man arose, stiff and crippled, his face drawn to one side, and said, "You can see what the Lord has done for me, he d—d near ruined me!"

The application of that story is this: Dr. McComas has been my physician for many years. I have had to call on the Doctor a number of times in that capacity and there have been times in my earlier career when I thought he had d—d near ruined me.

I noticed on the program that I am to speak on "McComas in Public Life." If by that is meant that he has held office my speech is finished before I begin because he never held a public office. I had a really good speech, but when McComas called me up to his room and asked me what I was going to say, he practically cut out the best portion of my speech.

Dr. McComas has been my lifelong friend. We live in adjoining blocks, lived there all my life, and I know McComas better than he knows himself. Dr. McComas is loved, honored and respected by every man, woman and child in that community and in the county. As a matter of fact he is loved and respected wherever he is known. Dr. McComas, though never holding public office, has been one of the most public spirited citizens that our county has ever produced. He is a politician of the old school and just as shrewd as they make them, and although he has never sought office himself he has ever been back of the man who, honest, fearless and courageous, is seeking office. When Dr. McComas passes on to his great reward this splendid organization, our community and our county will have lost a man who has spent his entire life for humanity, a humanitarian in every sense of the word.

Our Guest of Honor as a Professional Man: His Aims, Ideals and Methods

Dr. W. L. ALLEE, Eldon: An individual of the type of Dr. McComas, who possesses most of the traits to which the human family is heir but has so adjusted and controlled them to stand every mental or moral load with unflinching poise, rather defies character dissection. However I would say, speaking of aims, ideals and methods, that his aim has ever been to be a constructive friend of every doctor qualified to practice medicine. I have never known a doctor who accepted his professional responsibilities as does Dr. McComas, and his aim has ever been to discharge his responsibilities conscientiously.

As to his professional ideals, it is my opinion that he has accepted for his Golden Rule of conduct the code of ethics of the Bible and has adhered to this most rigidly as evidenced by the love and esteem accorded him by his fellow practitioners.

As to his professional methods, how he does it, I do not know, but we know he does. I have always observed him working with the other fellow, either with the practitioner as an individual or with practitioners as a group, to the end that the profession

may enjoy the protection and command public recognition which it so richly deserves. It seems to me this unselfish desire to advance the cause of our profession is the key to the success of his methods. Most of us when we accomplish anything look about to see whether we will receive proper reward, proper recognition and commendation. But as I have observed Dr. McComas his method seems to be to decide what is right and then so to act, and let results take care of themselves.

I would say the success of his methods is due to work well and cheerfully done over a long period of time. In my opinion he possesses the professional poise and the comprehensive understanding of an ideal country doctor, with great tolerance for the shortcomings of all his friends. With this rich background he is just in his prime to serve our cause, which I feel is dearest to his heart.

His Pleasures and Recreations

Dr. J. F. HARRISON, Mexico: I was afraid the Chairman was going to include in his remarks Dr. McComas' heredity and genealogy because I think that bears directly on pleasures and recreation but he would have encroached on my territory.

Arthur McComas is 50 per cent Irish and 50 per cent Kentuckian. The facts will bear me out that by heredity he is bred for pleasure and recreation and a great deal of it.

I have known him intimately for many years but being a very indifferent sportsman I have not been able to enter into all of his varied sources of pleasure and recreation. He fishes in the White River of Missouri's famous Ozarks and hooks fish of fabulous size. At Sturgeon they have annual field trials for bird dogs. Through the friendship of judges and merit of his dogs he has won many trophies.

When I first knew McComas he owned a string of trotters and pacers, some of which became famous on the racing circuits. Arthur has never lost interest in horse races and in traveling. In his more mature years he seems to have thought it the best policy to let someone else own the horses and entertain himself by watching them on the track.

Our mutual friend, George Lee, of Mexico, invited Arthur and me to be his guests at the State Fair at Springfield, Ill. The night before driving to Springfield we had a very strenuous time because of an automobile accident in my town in which some of my friends were seriously injured. It is not true, but since that trip Dr. McComas has been telling a story like this: We were seated in a box for the afternoon races and when the horses came under the wire at a speed that lowered the world's pacing record Arthur said I was asleep.

When I have been with our friend on these occasions my interest probably has not been as keen as his. I am of Scotch-Irish and Virginia stock and haven't the sporting blood that goes with the Kentucky and Irish breeding which is so wonderfully mingled in our guest of honor.

A year ago we attended the Derby at Churchill Downs, Louisville. After providing ourselves with the day's program and various form sheets Arthur began talking of the breeding and past performance of the horses. He actually knew the family tree of each horse. After selecting two horses which we proposed to back I was delegated to buy the tickets. While doing this I met up with a tout who informed me that a horse named Lucky Tom would undoubtedly win the race. On this hunch I purchased a ticket on Lucky Tom. When I returned to my seat in the

grand stand I told Arthur of my encounter and the tip on which I had invested. McComas said, "If it rains before they get started (the sun was shining brightly) that might be all right, for Lucky Tom is a mud horse." There were sixteen running and Lucky Tom came in three lengths behind the fifteenth horse.

If I should speak of McComas' pleasures and recreation in detail it would consume a great deal of time. In reality his greatest pleasures are his friends, his home and the wonderful hospitality he dispenses there.

Aside from and above all other pleasures and interests is the medical profession.

I know of no one more sincerely or truly devoted to the cause of organized medicine.

As a Lay Member of the State Medical Association Sees Him

MR. EDWARD WATSON, Columbia: I was nominated and elected to read the telegrams and letters which were sent to Dr. McComas, and I thought I had an easy job, because as the editor of a newspaper I read prose and verse and every kind of chirography from Dan to Beersheba.

This is the first opportunity I have had to thank the State Medical Association for electing me a lay member of the Association. I will not say it is the first opportunity I have had of attending and that I have not done so was not for lack of invitations. My friend, Tom Bodine, of the *Paris Mercury*, whose fame is not confined to Monroe County, and I were elected at the same time, and it is an honor we both appreciate. Bodine exercised his prerogative at once and went to a drug store, got a blank prescription, and wrote one and sent it to me. It read! "Spiritus Frumenti, one barrel. Take as desired." I rushed right out to the first drug store and presented the prescription. In these parlous times I did not think they would have it on hand, but thought they might compromise on a pint, or a half pint, or even three fingers. But the druggist knew me, and he said, "You and Mr. Bodine were both elected honorary members, you are not real doctors, so I cannot recognize this."

Dr. McComas' father and mine were dear friends. Arthur lived in our home when he attended the State University. He has been my dear friend ever since our youth, through middle age, and I was about to say, old age, but I was reminded of an old uncle of 92 who refused to tell his age when asked how old he was because it would ruin him with the women. So we will not speak of old age.

I had a lot of things to say that seemed to me very pertinent and appropriate and all that, but when I got on my feet they vanished into thin air. If I could just say what I think I am going to say at these post-prandial affairs, it would be wonderful.

Rambles in the Highways and Byways of His Life

DR. R. A. WOOLSEY, St. Louis: When I got into St. Louis Saturday morning I found I was to say something about the highways and byways of Dr. McComas life, and I want to say that these highways and byways run from coast to coast and from Canada to the Gulf because I have seen him all over the United States. I want to say further that there is a good deal of difference between a doctor and a man. Unless you are a real man you are not a real doctor. Dr. McComas is a real man. Dr. Harrison has spoken of his pleasures and recreations. Unless a man has recreations and pleasures he is a flop as a doctor. Dr. Harrison also said he was a hunter, a

fisherman and a race horse man. He gets his love of race horses from Kentucky and the hunting and fishing from the Missouri Ozarks.

We all seek our kind. One time last winter I was the guest of the Alabama State Medical Association. I was out with Dr. Lloyd Noland, of Birmingham, and some of the other fellows, and met a doctor named Kossuth A. Mayer. I asked him where he was from and he said from a little town in Alabama. I talked to him for some time and was much impressed with him. I get a great kick out of some of these Southern fellows. He said he could just as well practice in Mobile, or New Orleans, but he wanted to be close to hunting and fishing. Next day I asked Noland about this man, and he said, "He is just what he says he is. He practices in a little town in Alabama named Lower Peach Tree. To give you an idea of the kind of fellow he is, he goes to medical meetings and keeps up with the times; he could practice in any of our cities but he stays down where he can hunt and fish. I have hunted and fished with him many times. A couple of years before he was at the Virginia state meeting in Richmond, and some fellow asked him where he was from. He said he was from Lower Peach Tree, Alabama; the other man said he never heard of it. And this Alabama man replied, 'You would never have heard of Mt. Vernon if it had not been for George Washington!'" So it is with Dr. McComas. He is a hunter, a fisherman and likes racing horses. He is a real man—if he were not he would not be a real doctor.

McComas as Weighed and Viewed by the President of the Missouri State Medical Association

DR. JOSEPH W. LOVE, Springfield: I have had occasion in times past to answer to that toast, and I remember very well the first time that Dr. McComas attracted my attention. He was not holding public office but a quasi public office as he was chairman of the Council. My friend, Dr. Shuttee, who was President at the time, accorded me the great privilege of being invited into the sessions of the Council when a member was being tried for unprofessional conduct. My impression of McComas acting in a judicial capacity was weighed and viewed, and could be expressed in a single word—poise. When I say that he possesses the characteristic of poise it does not mean that he is perfect. I knew a man once who had two boys. He said their legs were not the same—one's legs were too long and the other's too short, but they averaged up pretty well. That family possessed poise because they were so made that they balanced. My impression of Dr. McComas on that occasion was that if I were guilty and being tried in his court I would be very apprehensive, and if I were innocent I would feel that justice tempered with mercy would be dealt out to me.

On the whole, I think that all the tributes that have been paid to McComas here tonight are something like the tributes we have in mind when we look at the grave of the Unknown Soldier—he is an ideal. Perhaps if it were known, the Unknown Soldier possessed the poise which we would hold up as ideal. We feel that in honoring Dr. McComas we are honoring many unknown soldiers in the profession, not only of this State but all over this broad land, who have done their duty as they saw it, both toward their fellows and toward their organization. I would say of Dr. McComas what Mark Antony said of Brutus:

His life was gentle, and the elements
So mix'd in him that Nature might stand up
And say to all the world: "This was a man."

Travels in Alaska and European Countries With My Buddy, Our Guest

MR. OMAR D. GRAY: I am a newspaper man and have a very brief comment to make.

I want to thank the physicians of Missouri for honoring my lifelong friend and buddy, Dr. McComas. I know his heart beats faster and it is all much appreciated. A finer man than McComas never lived, and a better country doctor never has been discovered.

He and I were born in the same town. Wherever he is known best he is loved best. We went to school together and went to Missouri University about the same time. When I erected a two-story building in Sturgeon twenty-five years ago I gave him two rooms, and he has ever since paid his rent promptly. He owns three farms and he can borrow money anywhere in the county. He is a good traveler. I went to California with him one time and to Alaska another. He is a horseman, and knows horses and dogs—and people. He knows how to breed horses, and everybody in our county loves him. I went to Europe with him, and he was in an official position. I made a contract with him that if he kept me well I was to pay him, but not a cent unless he kept me well. And that so appealed to him that I was not sick a day. Columbia has been trying to steal this man from us for years, but he sticks in Sturgeon and serves the people of the county, and they love him.

Thank God for doctors such as Dr. McComas. No matter where I am, if I am sick I wire for him and I always feel better when he comes. If you want to have a good laugh, get him to tell about teaching me how to hunt big game. He lies a little but he puts it over.

I am honored to be here tonight. As I said before, I love Dr. McComas and would follow him to the ends of the earth.

Hardships and Rewards That Have Been His

DR. G. WILSE ROBINSON, SR., Kansas City: I have been given two subjects upon which to speak, possibly with the thought that if I could not speak on one I might on the other—Dr. McComas' hardships and his rewards.

In regard to his hardships, I think I have a greater hardship to talk about than Dr. McComas ever had. Dr. McComas was extremely and unusually fortunate in the beginning of his career in medicine. He had a father who was a distinguished physician and he was intimately associated with two of the greatest doctors that this State, and perhaps others, ever saw—Dr. Andrew W. McAlester and Dr. Frank J. Lutz. He was taught medical politics by the greatest medical politician the medical profession ever had, Frank J. Lutz, and he came out of that teaching a finished politician. That was his start. Of course he had to start his medical practice in his own home town. He had to overcome the prejudice of the home town against a home boy being a doctor. The only hardship he ever had was hard work, and he never considered that a hardship; to him it was a pleasure. Hard work has been his pleasure, hard work for his profession and his community. He did not suffer privation as many young doctors do.

A few words about his rewards. He has been rewarded by many positions of honor in his profession, but those were only incidental to his career. He has been honored by seeing placed upon the statute books of our State many good medical laws for which he has fought. He has been rewarded by seeing a great improvement in medical education in our State. But

perhaps his greatest reward is this gathering here tonight of the men who honor and love him. The greatest reward of his career is the words spoken here tonight, and I doubt if he ever will appreciate any reward as he does this.

We honor and love him because he has that wide-eyed sympathy which gives hope and cheer and power to humanity, which is so excellent a credential of genuine manhood, and for that capacity to reason upon affairs and plan his action, which we always reckon upon finding in every man who has studied to perfect his native force. His ideals have broadened to suit the wide day in which he lives. He has known men of all kinds and has chosen his way amid the bustle with all self-possession, with wise genuineness, in calmness, and yet with a quick eye of interest and a quick pulse of power.

He has the serenity of power, the naturalness that is Nature's poise and mark of genuineness; an unsleeping interest in all affairs, all things believed or done; the catholic understanding, tolerance, enjoyment of all classes and conditions of men; the conceiving imagination; the planning purpose; the creative thought; the wholesome, laughing humor; the quiet insight, the universal coinage of the brain are his gifts and qualities, and these rounded and perfect powers serve us as our ideal of what it is to be a finished human being.

McComas—The Ideal Physician

DR. F. G. NIFONG, Columbia: It seems there has been much said about my old friend Mc tonight. I don't know if all has been told. There may be something left for me to say to you. In our town some years ago a celebrated old lawyer was running for Congress on the Republican ticket. He was addressing the colored population in an emotional strain telling them how dear they were to him. He had been reared with colored people, had had a black mammy, played with the colored boys and girls, gone picknicking, hunting, fishing and swimming with them. Had—well—and just then an old whiskered lieutenant on the corner of the platform broke out with "Tell it all, general, tell it all."

I hold no brief for McComas. I mean to tell the truth about him and I am quite well acquainted with him. After an intimate association and friendship of more than a quarter of a century, I maintain that our friendship has stood the acid test. I have a keen sympathy and a clear understanding of his life and struggles for I am the son, as he is, of a country doctor. We saw in our childhood the struggles and self-sacrifices, the strenuous life of the country doctor and followed our parents. McComas deserves no particular credit, he is simply the victim of heredity and environment, the son of the father, the very finest type of the doctor of the old school; the child of a mother of unusual culture, refinement and strength of character. No child could have been better born and more sensibly reared. And what an environment! In the country and in touch with Nature, known to everybody, the little niggers, the town philosopher, and guided as a straight shooter and game sport by the horse trainer in his father's stables. You can visualize these conditions now fast disappearing and you can understand why McComas is McComas.

With the gift of such parentage and the conditions of childhood and subsequent education it is easy to see why McComas became another doctor of the old school type—the ideal physician. It is not hard to understand why he is the gentleman always without ostentation. It is easy to analyze his great love and

loyalty to his friends and home people, to understand why he elected to stay in Sturgeon and serve when he might easily have become the outstanding metropolitan surgeon with no peer.

To show how capable and able he is—some months ago he appeared in our county medical society with about 5 feet of intestines he had resected from a sixty-five year old patient suffering with a mesenteric thrombosis. This was done in the kitchen with the help of a farm hand and the housewife. The patient made a good recovery. Yes, because Mc stayed three days and gave the latest therapeutic measures as hypertonic saline, etc. Could my city contemporaries do better with a battery of nurses and assistants and the ultimate preparation and asepsis? Some of you perhaps are thinking that Nifong is passing the "apple sauce" on McComas. I say I am not. I am telling some truths about him. I am proud and happy with his loyal friendship. I am the better citizen and doctor because of my admiration and imitation of him. He is very nearly the prototype of Weelum McClure, so beautifully portrayed by Ian McClaren; and he is more for he possesses the ability of the great London surgeon who came to McClure's assistance. My intimate friendship does not blind me to a few minor faults he and all of us possess. Neither does it make me underestimate his virtues. Our friendship gives me full opportunity to understand his philosophy and to know why he is the outstanding leader in the profession in our State today; to know why he gives his time, his money, his energy to the betterment of the profession and organized medicine; to understand his love and loyalty to his own people and his friends; to know why he keeps his head when those about are muddled, and his capacity for leadership; to know of his sportsmanship, his "give and take" and never a whimper when he takes his loss; to understand his poise and stability on all occasions and his own too modest estimate of himself; to understand his visions and idealism always made practical by his good common horse sense; to appreciate his gentleness with his patients and his great love of humanity; to see his admirable democracy in his contact with the lowly or before the seats of the mighty; to wonder at his indomitable energy and capacity for hard work; to marvel at his placidity at failure in any venture after he had made a super effort. Indeed, I may not speak all of my admiration of McComas. More beautifully and more accurately it may be done by Kipling in his wonderful poem portraying the qualities of a man such as McComas:

If

If you can keep your head when all about you
Are losing theirs and blaming it on you;
If you can trust yourself when all men doubt you,
But make allowance for their doubting, too,
If you can wait and not be tired by waiting,
Or being lied about, don't deal in lies,
Or being hated, don't give way to hating,
And yet don't look too good nor talk too wise;

If you can dream and not make dreams your master;
If you can think and not make thoughts your aim,
If you can meet with Triumph and Disaster
And treat these two imposters just the same;
If you can bear to hear the truth you've spoken
Twisted by knaves to make a trap for fools,
Or watch the thing you gave your life to broken,
And stoop to build 'em up with worn-out tools;

If you can make a heap of all your winnings
And risk it on one turn of pitch-and-toss,
And lose, and start again at your beginnings
And never breathe a word about your loss;
If you can force your heart and nerve and sinew
To serve your turn long after they are gone,
And so hold on when there is nothing in you
Except the WILL which says to them, "Hold on!"

If you can talk with crowds and keep your virtue,
Or walk with kings—nor lose the common touch,
If neither foes nor loving friends can hurt you,
If all men count with you, but none too much;
If you can fill the unforgiving minute
With sixty seconds' worth of distance run,
Yours is the earth and everything that's in it,
And, which is more—you'll be a man, my son!

THE TOASTMASTER: Dr. Neal will now read the letters and telegrams which have been received.

Dr. M. Pinson Neal, Columbia, read letters and telegrams from the following.

M. A. Bliss, St. Louis
Mr. Tom V. Bodine, Paris
E. N. Gentry, Sturgeon
R. B. H. Gradwohl, St. Louis
O. B. Hall, Warrensburg
B. W. Hays, Jackson
George A. Johns, St. Louis
Vincent L. Jones, St. Louis
Kerwin W. Kinard, Kansas City
Dean Lewis, Baltimore
Harvey G. Mudd, St. Louis
Archer O'Reilly, St. Louis
R. L. Sutton, Kansas City
R. L. Thompson, St. Louis

In addition to these letters and telegrams congratulatory letters were received from many of Dr. McComas' friends who are present.

My Defense

DR. ARTHUR R. McCOMAS: Mr. Toastmaster and Gentlemen of the Missouri State Medical Association and Friends: This is one time when I am not equal to the occasion. I wish that I had words to express my gratitude and deep feeling to the members of the State Medical Association for their presence here and for the kind words that have been spoken; but as I have said, I am not equal to it, I do not know how. I never in all my time as a member of this Association, as a working member, dreamed of anything like this. In fact, I am overwhelmed.

As has been said by one of the speakers, when I first became officially connected with the State Association I was sponsored by Dr. McAlester, that kindly gentleman who was beloved by all who knew him. Later on I became associated with Dr. Lutz, who was a teacher in the school from which I was graduated. I was closely associated with him and when he passed to his rich reward it fell upon me to assume the position he had so ably filled. I did it with fear and trembling because he was endowed with a mentality never surpassed and seldom equalled in medical organizations. He was criticised by members of the organization; it was said that he desired power, that he desired the emoluments of the position which he held, but to my mind that was just the outpouring of someone's disappointment. I cannot recall a single action in the years of my close association with him which did not indicate that he held uppermost the ideals of medicine and the betterment of the service of the medical profession.

With such a background I have attempted in my feeble way, in whatever position I have been placed, to try to carry on and uphold those ideals. In doing this, as I look around me I see scores of men who have, directly and indirectly, done as much as I have done. I am not so vain as to feel that this testimonial dinner is to me alone. I feel rather that it is a testimonial, as our distinguished President has said, to all men who are attempting to uphold the ideals of the profession.

I do not know of anything else I can say, Mr. Toastmaster and gentlemen, except that from the bottom of my heart, I thank you.

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E. J. GOODWIN, M.D., Editor
1023 Missouri Building, St. Louis, Mo.
Telephone, Jefferson 5261.

PUBLICATION } J. C. B. DAVIS, M.D., Chairman
COMMITTEE } G. WILSE ROBINSON, M.D.
M. A. BLISS, M.D.

THE ROLE OF HEPATIC INSUFFICIENCY IN SURGICAL PROBLEMS

WARREN H. COLE, M.D.

ST. LOUIS

We are realizing more and more that hepatic insufficiency is an important symptom or complication of many diseases and that it is a very significant item from the standpoint of the surgeon in the determination of operability. Unfortunately, this condition is usually not recognizable clinically until the disease is far advanced. This insidious characteristic has led to many attempts to test for insufficiency by laboratory means and has been responsible for the development of an enormous number of laboratory tests, none of which are entirely satisfactory.

Two of the most evident causes of the difficulty in finding a satisfactory test are without doubt the multiplicity of function and the remarkable reserve which the liver maintains in carrying out its physiological duties. A brief enumeration of these functions will aid in a better understanding of some of the difficulties encountered in a study of hepatic function, viz.:

(1) Carbohydrate storage and metabolism including conversion of monosaccharides to glycogen, and vice versa, as demonstrated by Claude Bernard in 1857, are among the most important functions of the liver. (2) The secretion of bile is well known and its significance can be readily appreciated. The role of bile constituents in the splitting of fat is undisputed. (3) From the standpoint of systemic protection the liver is no doubt one of the most important organs because of its remarkable ability to detoxify various toxins and drugs. (4) The role of the liver in the metabolism of proteins and amino acids with conversion of nitrogenous products into urea is complex and very inadequately understood although quite definitely proved. Mann¹ and associates have made noteworthy contributions on this subject recently by

proving that the formation of urea diminishes and probably ceases after experimental hepatectomy. (5) Bilirubin is made in many organs besides the liver but is excreted only by the liver. (6) Many inert as well as toxic substances coming to the liver from the intestinal tract or through the blood stream are excreted into the bile and thus eliminated. (7) The importance of the liver in hematopoiesis is clearly demonstrated by the effect of liver extract on pernicious anemia. (8) There are innumerable miscellaneous functions including the formation of blood clotting elements (e. g., fibrinogen) and innumerable enzymes most of which are no doubt unknown. It is barely possible that the role of the liver in the formation of vital hormones and enzymes as yet unknown will prove to be more important than any of the functions known at the present time.

As stated, none of the hepatic function tests available at the present time are very satisfactory but utilizing the phenoltetraiodophthal-
ein test, consisting of the intravenous injection of 40 mg. of the dye per kilogram of body weight, it has been possible to predict, at least to a considerable extent, the operability of patients. Early in the development of this test we discovered that of four patients dying following cholecystectomy all had a retention of the dye of more than 50 per cent one half hour following injection. (Ten per cent is considered normal.) Utilizing this information we accordingly postpone operation on all patients with retention of dye above 40 or 50 per cent in one half hour and resort to oral and intravenous glucose, transfusions, bed rest, etc., until the retention falls below these figures. By this means we have been able to effect a sharp decline in our mortality figures following cholecystectomy. In a survey of mortality statistics made recently by Graham,² a 6 per cent mortality was noted in 216 cholecystectomies performed in the Barnes Hospital Clinic during the three years preceding the advent of the dye test (phenoltetraiodophthal-
ein) as a test of liver function and determinant of operability.

¹Read at the 76th Annual Meeting of the Missouri State Medical Association, Kansas City, May 1-4, 1933.

Of 226 patients upon whom cholecystectomy was performed during the three years following the use of the dye test as a determinant of operability as described above, a mortality of only 0.6 per cent was experienced. We make no claims of superiority of phenoltetraiodophthal-
 ein over other dyes in estimating retention except that the dose of 3 to 5 mg. per kilogram of body weight as advocated for other dyes would appear to be too small to exert any significant load on the liver. The pigmentary tests including the icterus index and quantitative van den Bergh are reliable indicators of the degree of hyperbilirubinemia but cannot be considered literally as tests of hepatic function since bilirubin is relatively nontoxic in the concentrations encountered in jaundiced patients. The test for urobilinogenuria is probably almost as accurate as the dye tests in determining hepatic function but is apt to fail in the most crucial cases, namely, obstructive jaundice. The explanation of this defect in the test appears to have been found by the work of McMaster and Elman.³ They noted that total obstruction of the bile flow caused disappearance of urobilin and urobilinogen from the stool and bile except for a small quantity which reappeared as the duration of jaundice was prolonged.

We have noted that the types of disease yielding the most consistently high figures of retention are confined largely to those infections of the liver associated so frequently with gall-bladder disease and to diseases showing destruction of hepatic cells by toxic factors (such as acute yellow atrophy). The fact that the hepatitis produced by cholecystitis is one of the conditions most readily detected by the test makes the test probably more applicable to surgical problems than to medical diagnoses. We were

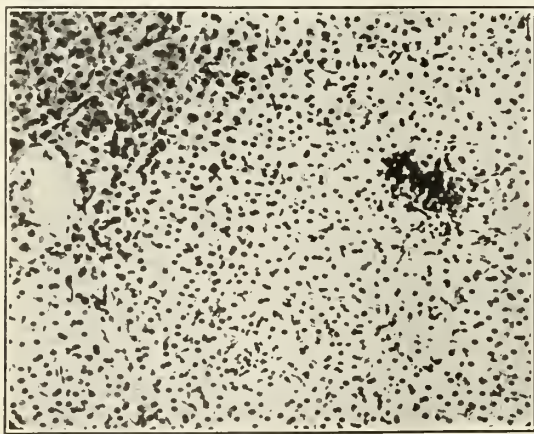


Fig. 1. Section removed from liver of a patient with carcinoma of the pancreas in the presence of jaundice of three months' duration. Liver function was 15 per cent in one half hour. Microscopically, could not be differentiated from a normal liver except for an occasional deposit of bile pigment as seen at one point in this section.

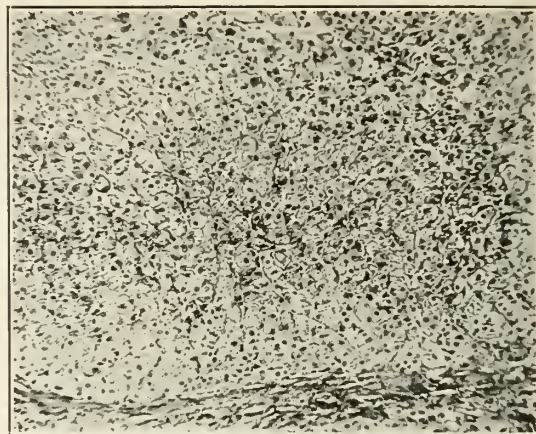


Fig. 2. Liver greatly enlarged but not nodular. Moderate grade of cirrhosis but retains a cell of fairly normal appearance and does not present any necrosis as is seen in figure 3. Liver function test only very slightly above normal. Omentectomy was performed without reaction.

somewhat surprised when we discovered that the figures of retention might be only slightly elevated in patients with large livers, such as are produced by cirrhosis or even carcinoma of the liver (late stages excepted). However, when we consider this phenomenon from a physiological standpoint, it can be perhaps very simply and accurately explained. Hepatic cells have an ability to regenerate very rapidly. Since the injury to hepatic cells and displacement of these cells take place so slowly in diseases such as cirrhosis and carcinoma, it is logical to assume that regeneration is rapid enough to maintain the number of functioning cells at a point approaching that of normal except in the late stages of disease. There is perhaps no proof whatsoever that the hepatic cells in cirrhosis or carcinoma (except the carcinoma cell itself) are injured until the disease becomes far advanced. This finding of retention only slightly above normal may even indicate that the hepatic cells in the early stages of cirrhosis and carcinoma are not damaged but are merely displaced by the fibrous tissue or tumor growth, respectively.

It should also be emphasized that jaundice itself does not necessarily result in an impairment of liver function. Figure 1 is a photomicrograph of a section of liver removed at operation from a patient with a carcinoma of the pancreas who had been jaundiced four months and who exhibited no clinical, microscopical or laboratory evidence of impaired hepatic function. The fact that his liver was moderately enlarged does not necessarily denote impairment of function. On the contrary, there is slight evidence to suggest that in some instances enlarged livers of this type are actually capable of doing more work than a normal one. This might signify that the particular dis-

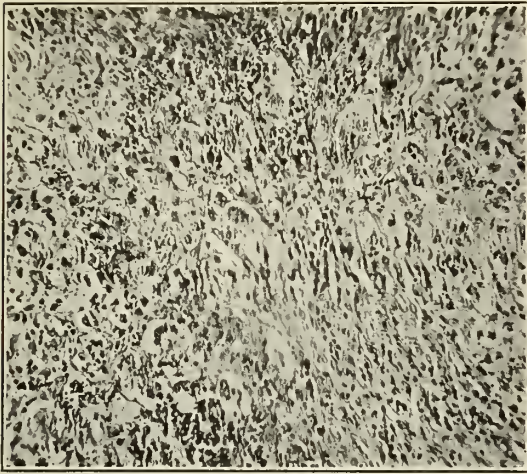


Fig. 3. Section removed from a patient with intermittent painless jaundice of three and one half months' duration. Clinically patient appeared to be a fairly safe operative risk. Note extensive lymphocytic invasion and necrosis of hepatic cells with very few normal hepatic cells remaining. Function test could not be done but cellular damage is great enough to make it seem probable that most any test would have revealed pathological results. Patient developed so-called hepatic asthenia characterized by the most severe grade of insufficiency and died on the ninth postoperative day.

ease with which a patient is afflicted exerts an excessive demand on the functions of the liver and is in that way responsible for an active regeneration of hepatic cells. We wish to emphasize, however, that most of the cases of so-called "liver deaths" occur in patients who are jaundiced. Other data can be presented to support the idea that jaundice and enlargement of the liver, even with moderate cirrhosis, are not necessarily accompanied by hepatic insufficiency.

REPORT OF CASE

The section of liver shown in figure 2 was removed at operation from a Negro man, aged 26, who had complained of a swelling of the abdomen of at least five years' duration. Two months before admission to Barnes Hospital the enlargement of his abdomen was so pronounced as to interfere with work even though he complained of no symptoms, such as loss of weight, loss of appetite, etc. Pain had been present only two weeks prior to his entrance to the hospital. On examination a marked anemia was found, the erythrocyte count varying between 2,600,000 and 3,000,000. After removing 6 to 8 liters of light brown bile-stained fluid from the abdominal cavity the liver could be palpated at least a hand's breadth below the costal margin, but no enlargement of the spleen was made out. Moderate jaundice was present. During his hospitalization he developed an agranulocytosis, which at one time was almost complete, with a leukocyte count as low as 1900. He recovered from this in eight to ten days but consistently retained a leukocyte count of 4000 to 5000. A liver function test (phenol-tetraiodophthalein) was performed two weeks following his attack of agranulocytosis and one day before operation. It revealed a retention of 15 per cent which is only very slightly above normal. At operation an enormously enlarged liver was found. The surface was red and granular but not nodular.

Microscopically there was a slight cirrhosis but the hepatic cells themselves presented a practically normal appearance (fig. 2). The spleen was only slightly enlarged. Even after consideration of the operative findings it was difficult to make a definite diagnosis. However, the condition seemed to be explained best on the basis of a hypertrophic cirrhosis in spite of the fact that many internists think hypertrophic cirrhosis with chronic enlargement of the liver is extremely rare. A few liters of bile-stained ascitic fluid were removed. The omentum was atrophic but an omentopexy was nevertheless performed in order to prevent, as much as possible, the reaccumulation of fluid. In spite of the fact that the patient appeared to be a very poor risk, as evidenced by jaundice, anemia and enormous enlargement of the liver, he sustained practically no reaction from the operation, thus suggesting that the liver function test was a better criterion than clinical judgment. It was impossible to determine from perusal of the temperature and pulse charts on what day the patient had been operated on.

Contrast this patient with the one described below who, from a clinical standpoint, appeared to be a fairly good risk but who developed symptoms of so-called "hepatic asthenia" and died nine days following operation.

REPORT OF CASE

TYPICAL HISTORY OF PATIENT WHO DEVELOPED SO-CALLED "HEPATIC ASTHENIA"

A white woman, aged 48, was admitted to Barnes Hospital, January 31, 1933, with a history of the development of painless jaundice beginning three and one half months before admission. About six weeks after onset the jaundice decreased until the skin was practically clear but within a few weeks it returned. Clinical examination was practically negative except for the jaundice. No masses were felt in the abdomen but the liver was thought to be palpable 2 cm. beyond the costal margin. The systolic blood pressure was 120. The erythrocyte count was 3,950,000. Blood calcium was 9.2 and blood phosphorus 3.1. The Kahn test was negative. There were no ab-

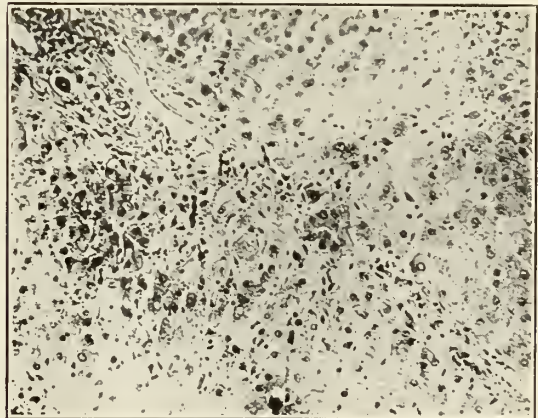


Fig. 4. Patient had painless jaundice of several weeks' duration but at operation (several years ago) nothing could be found to account for the symptoms. Preoperative liver function test revealed 70 per cent retention which we now consider incompatible to operability. She died on the fourth postoperative day with symptoms of severe hepatic insufficiency. Positive findings at autopsy were confined to generalized necrosis of hepatic cells as revealed in the section.

normal findings in the urine. The N. P. N. was 28. Icterus index was 166. The stools were clay colored. The electrocardiogram revealed nothing abnormal. Unfortunately, a liver function test was not performed within the first few days and permission could not be obtained from the patient to do one because she insisted on obtaining what relief an operation might have to offer. At operation (by Dr. E. A. Graham) under ether anesthesia the gallbladder was found to be moderately distended and the head of the pancreas moderately enlarged and indurated. The liver did not appear particularly small. A small piece was removed for microscopical examination (fig. 3). There were no stones in the gallbladder or common duct. A small ovarian cyst and myoma of the uterus were present. In view of the probability that the induration of the head of the pancreas whether due to pancreatitis or tumor was obstructing the bile flow, a cholecystogastrostomy was performed. In spite of a short operation and lack of shocking procedures the patient had a moderate reaction with a fall in blood pressure but she recovered within a few hours. She had no fever at any time following the operation and her pulse remained constantly between 90 and 100 per minute except for a sharp rise during the last twelve hours of life. As soon as the effects of the anesthetic wore off she began complaining of lassitude and weakness which increased from day to day. She also complained of an inability to "get enough air" although her respiratory rate remained at 20 to 22 per minute except for the last four days of life when they were between 10 and 14 per minute. Presumably as a reaction to preoperative transfusion her erythrocyte count had risen to 4,800,000. A few days after operation an edema of the ankles appeared and persisted until death. The urine remained negative except for a faint trace of albumin and granular casts, the casts being numerous the last two days of life. Following operation urobilinogen was found in the urine at all times, and at all times during her postoperative course there was bile in her stools which, in view of the lack of bile in her stools before operation, indicated that the cholecystogastrostomy was probably functioning. Following the operation she was always drowsy and slept a great deal except for a few days when she complained of pain. During the last few days she became irrational and remained so until death. During the last four days of life her hands and feet were cold and clammy and her finger nails cyanotic. The N. P. N. on the fifth postoperative day was 60. The urine became increasingly more scanty throughout the last few days of life. The patient continued to grow weaker, became more drowsy and irrational, and died on the ninth postoperative day without developing any additional symptoms except a rise in pulse rate with a fall in blood pressure during the last ten or twelve hours.

Autopsy was performed by Dr. Walter Siebert who reported the following pathological diagnoses: Toxic hepatitis with atrophy of the liver, jaundice, bloody ascites, ovarian cyst, myoma of uterus and hemorrhages into the renal pelves. The liver weighed scarcely more than half the normal weight and microscopically there was a diffuse necrosis of hepatic cells with numerous hemorrhages, extensive invasion of lymphocytes and a few leukocytes. The kidneys showed hemorrhages into the walls of the pelves but very few parenchymatous changes except dilated vessels with occasional hemorrhage. There were very slight degenerative changes in the tubules and glomeruli but no more than would be expected in the kid-

neys of any patient dying from causes other than accident.

As noted in the report above, the liver was the only organ showing significant pathological findings. Certainly the extreme necrosis of cells with atrophy of the organ are sufficient to explain death. We feel that an associated renal damage as has been emphasized recently by Helwig^{4, 5} and associates is extremely common and important. Although there was very little pathological evidence of nephritis in this patient, at least a moderate amount of renal damage must have been present as indicated by the elevated N. P. N., the oliguria (terminating in almost complete anuria) the albumin and large amount of granular casts. The edema may or may not have been due to renal impairment.

SYMPTOMS AND DIAGNOSIS OF THE FATAL TYPE OF HEPATIC INSUFFICIENCY

The symptoms are so typically illustrated in the second case history that we will refrain from detail here. As previously stated, although jaundice does not necessarily predispose the patient to hepatic insufficiency, it is a fact nevertheless, that jaundice is present in a majority of the cases of so-called "liver deaths." Moreover, the disease frequently occurs as a sequel or complication of an abdominal operation. Although jaundice is occasionally encountered in biliary obstruction caused by carcinoma of the head of the pancreas, it is more frequently seen in bile duct obstruction by stone, with an accompanying infection in the liver or, in cases with necrosis of hepatic cells, caused presumably by toxic causes and which may or may not be accompanied by atrophy of the organ. As stated, Helwig and associates have recently made a detailed study of a group of cases similar to this latter group in which renal damage has been a very conspicuous factor. Although the symptoms of the patients described by Helwig are very similar to those described here and in other reports, it is quite probable that the variations, such as infrequency of jaundice and occurrence of fever and tachycardia in their cases, are explained by the peculiarities of this syndrome. As Walters and Parham⁶ have remarked, the first day or two of postoperative convalescence are apt to be uneventful except occasionally restlessness. Within a few days, however, the most conspicuous and constant symptoms appear, namely: lassitude, progressive weakness and drowsiness. Appetite is poor but usually retained. Vomiting is unusual unless complications such as peritonitis are present. Fever and tachycardia are not very common in our experience except in the terminal stages. Edema with cold and clammy extremi-

ties, anemia and mild cyanosis are occasionally encountered. Oliguria usually develops within a few days and becomes progressively more pronounced until death approaches when anuria is the rule. Albumin and casts increase with the duration of the disease. If a choledochostomy has been performed the bile flowing through the drainage tube will become pale and will sharply diminish in quantity just as was noted by Drury and Rous⁷ in experimental hepatic insufficiency produced by chloroform.

The factors producing the symptoms and hepatic damage in this type of fatal insufficiency are almost entirely unknown. At least a mild degree of hepatitis, frequently associated with insufficiency as evinced by the dye test, is present in practically all cases of the more pronounced infections of the gallbladder, as was shown pathologically by Graham⁸ several years ago. However, in spite of the frequency of hepatitis the severe type of insufficiency accompanied by high figures of dye retention and so commonly fatal, is comparatively rare. Unless the type of infection or organism is the important factor, it is difficult to consider infection the primary cause of this severe grade of insufficiency, especially when we recall that many of these cases do not reveal any evidence whatsoever of infection within the liver. Bile salts have long been considered toxic and capable of producing coma, cardiac damage, etc., but no proof can be offered, especially since the disease occurs so frequently without evidence of retention of bile constituents. Heyd⁹ has stressed the importance of observing the acidity and alkalinity of the blood by its CO₂ combining power, remarking that of fourteen cases of cholecystitis with a CO₂ combining power of over 80 volumes per cent observed by him in five years, six died. He feels that a certain group of these fatalities are influenced by intoxication of pancreatic origin. There can be no doubt about their being numerous instances of secondary injury to other organs, as has been so clearly demonstrated in the kidney by Helwig and associates. Another instance of secondary damage has recently been brought to light by Ivy¹⁰ and associates. Of seven animals on which they had performed plastic operations on the common duct five died, and autopsy revealed duodenal ulcer, biliary cirrhosis, hepatitis and jaundice. They suggest that "biliary stasis is the primary predisposing cause of the ulcer formation."

TREATMENT OF HEPATIC INSUFFICIENCY

Unfortunately, the type of insufficiency as illustrated by the case described here in detail usually terminates fatally in spite of the most

intensive treatment. Obviously, unless operation is urgently indicated, operative procedures should be postponed until the patient has had proper restorative treatment. In addition to bed rest and adequate caloric and fluid intake it is important that glucose be administered daily orally as well as intravenously in quantities as great as 100 grams per day so that the glycogen content of the liver will be maintained as efficiently as possible. The importance of an adequate supply of glycogen in the liver in its protection against toxic factors was demonstrated by Graham¹¹ many years ago. Althausen,^{12, 13} who has shown that, at least experimentally, the administration of insulin with glucose actually reduces the glycogen content of the liver, has recently discussed in detail the indications for dextrose therapy in hepatic disease. Transfusions are of distinct value. The administration of calcium is perhaps of doubtful value but is given routinely in this clinic because occasionally definite benefit has apparently resulted. Lamson, Minot and Robbins¹⁴ have recently offered experimental proof of the efficacy of calcium in the prevention and treatment of hepatic damage. Whether the calcium is given in the form of chloride, lactate or gluconate is apparently immaterial, but the inconstant results may possibly be due to failure of absorption. Bergeim¹⁵ has stressed the importance of an acid reaction in the intestinal tract to facilitate absorption of calcium. To produce this acidity he advocates the addition of lactose to the diet. Other factors in the absorption of calcium including administration of vitamins and parathormone are discussed by Bernheim¹⁶ and Cantarow.¹⁷

602 South Euclid Avenue.

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MANAGEMENT OF HEPATIC DISEASE

CHARLES A. ELLIOTT, M.D.
CHICAGO

Clinical investigation of the liver has been greatly accelerated in recent years. Many facts are now at hand which may be used to formulate a general plan of management of hepatic disease as such, comparable to those accepted for the control of cardiac, renal and gastric disabilities.

Certain features of the anatomy of the liver lobule should be kept clearly in mind. Of these, the relationship of the liver cell cords to the bile capillaries and the blood vascular system is of prime importance. The liver cell cords, each composed of a double column of about forty polygonal liver cells, originate in a blind end near the central vein and radiate toward the periphery of the lobule. The bile capillaries appear as a slit traversing the center of this double column of cells beginning at the blind end and extending to the periphery. The liver cells themselves are the important if not the only elements which make up the walls of the bile capillaries. At the periphery of the lobule the polygonal liver cells, altering their form, constitute the lining of the extralobular bile passages. Damage of the liver parenchyma, therefore, regularly causes disruption in the continuity of the biliary capillaries, the escape of whole bile and, inevitably, a resultant jaundice.

The liver cell cords are surrounded by a relatively massive network of sinusoids which receive blood from the portal vein and the terminal capillaries of the hepatic artery. These sinusoids are in intimate contact with the outer side of the liver cells. Apparently in its evolution the liver has changed from a simple tubular gland concerned with the secretion of bile to an endocrine-like organ concerned as well with processes of nutrition, receiving from the blood material which it either stores or transforms and finally returns to the general circulation.

This latter function is reflected in the close anatomical relationship which has been acquired between the liver cells and the sinusoids.

The reticulo-endothelial cells of v. Kupffer form an incomplete lining of the sinusoids. They are found anchored to the walls of the sinusoids by stellate projections which are believed to be continuous with the connective tissue framework of the liver. They are probably identical with the reticulo-endothelial cells widely distributed throughout the body and are considered as part of the so-called reticulo-endothelial system. They possess remarkable phagocytic powers engulfing particulate matter of all kinds and when satiated these cells are believed to become detached from their anchorage and carried in the blood stream to the lungs. Just what their fate may be in the lungs is not known. The Kupffer cells are believed to be concerned in processes of immunity and are known to play an important part in the deposit of connective tissue within the liver.

The liver parenchyma, both en masse and as individual cells, is constantly changing in bulk, form and appearance in the processes of food storage and nutrition. This mass as such, as well as the individual cells, is particularly sensitive to injurious agents such as chloroform, phosphorus, arsenic, copper, cinchophen, bacterial toxins and anoxemia. As a result varying degrees of injury of the hepatic cells are encountered. Hyaline and fatty degeneration represent the lesser degrees of injury from which restitution to normal may readily take place with the withdrawal of the toxic agent. Necrosis of the liver cells, apparently specifically affecting certain segments of the liver cell cords, is a more severe type of injury frequently encountered. A few or all of the cells of the individual cord may be involved. Restitution to complete anatomic integrity may still take place upon withdrawal of the damaging agent provided the hepatic framework is retained intact. Damage of the framework, as evidenced by round cell infiltration, hemorrhage and connective tissue replacement, results in distortion of the usual architecture of the liver lobule. Curiously enough some toxic agents are strictly selective in their damaging effects involving only the cuboidal liver cells and leaving the framework intact. This selectivity is illustrated in yellow fever, infectious jaundice and probably in so-called catarrhal jaundice in which complete restitution to normal takes place following extensive necrosis. Complete dissolution of the whole cell mass may occasionally be encountered as in acute yellow atrophy in which the liver cells appear specifically sensitive to some overwhelming cytotoxic or cytolytic agent.

In contradistinction to the degenerative phenomena just mentioned the liver cells possess an amazing ability to regenerate following injury. In this respect they possess characteristics common to undifferentiated or primitive cells. Whipple has estimated from experiments on dogs that a normal animal the size of man should be able to regenerate 150 grams of liver cells per day under favorable conditions, and Mann has estimated that six sevenths of the liver of the normal dog may completely regenerate in bulk within six weeks following partial resection of the normal liver. Whipple has shown that maximum regeneration occurs on a diet rich in carbohydrates when the portal circulation is maintained intact, but that little or no regeneration occurs in starvation or in the presence of obstruction of the common bile duct. The damaged liver may be less capable of regeneration than is apparent in the experiments on normal animals noted above; however, there is both clinical and histological evidence to indicate that regeneration even in pathological states may be extensive and that such regenerated tissue may function normally.

Two processes in apposition to each other are, therefore, recognized within the liver in pathological states; namely, degeneration and regeneration. Between these a balance may be maintained under favorable conditions. This is an additional factor which contributes to the so-called "silence" of the liver. On this account care should be taken to distinguish between liver disease and liver function. Extensive hepatic disease may be present which may not be disclosed by clinical evidence of disturbed hepatic function. An additional balance affecting liver function may be struck as between connective tissue deposit (cirrhosis) with the consequent restriction of the free flow of blood through the portal vein and sinusoids, and the establishment of a collateral circulation by devious channels (esophageal, hemorrhoidal and para-umbilical veins). The establishment of such a collateral circulation, if and when competent, may be non-symptomatic. Objective evidence in the form of dilated veins coursing up over the surface of the abdomen, a caput medusa, or hemorrhoids may be the sole manifestation suggesting the presence of cirrhosis.

The recognition of what may be the damaging agent in the production of hepatic diseases often taxes the ingenuity of the physician. Obviously the first essential in the management of hepatic disease is the recognition and, if possible, the elimination of the exciting agent. Alcohol, copper, arsenic, phosphorus, chloroform, infections such as syphilis, the toxins of infections, chronic cholecystitis and many other factors may be the

pathogenic agent in both acute and chronic hepatic disease.

The interest of the profession in cinchophen as such a hepatotoxic agent is gradually being awakened. Because of the long period of latency that may exist after taking the drug before symptoms suggesting the presence of liver damage develop, the etiologic relationship between ingestion of cinchophen and the obvious liver disease is often overlooked. It was five years following the introduction of atophan before it was recognized that this drug could set off a progressive hepatic degeneration. It is true that many patients are peculiarly tolerant to cinchophen, whereas others are particularly susceptible to it; fatal subacute yellow atrophy is known to have occurred after the administration of but a few tablets of the drug. The situation is furthermore complicated by the fact that cinchophen as such may be purchased in any drug store without a doctor's prescription and that it constitutes the effective ingredient of many popular "antirheumatic" remedies offered for sale on the open market. The potency of cinchophen as a hepatotoxic agent is so great that all patients with manifest hepatic disease who give a history of having taken medicines for acute or chronic arthritis should be under suspicion of suffering from cinchophen poisoning. The case of other hepatotoxic agents, some of which have been mentioned, is quite similar.

A high glycogen content within the liver is known to protect the hepatic parenchyma against damage, facilitate liver cell regeneration and shorten a prolonged coagulation time of the blood. Glycogen is readily deposited in the liver on a diet rich in carbohydrates or by the administration of glucose, as such, by mouth or intravenously. In addition, it is estimated that about 58 per cent of the protein and 10 per cent of the fat in the diet is converted into glycogen by the liver cells. Advantage has been taken of these known facts in the treatment of hepatic disease but their full significance is, I believe, not sufficiently appreciated. The average diet contains perhaps 300 or 400 grams of carbohydrate. To insure maximum glycogen deposit additional glucose should be given. This may readily be accomplished by prescribing fruit juices as a drink sweetened with glucose, corn syrup or sugar of milk three or four times daily. Two or three hundred grams of glucose may thus be added to the usual diet without inconvenience to the patient. The administration of glucose intravenously should be restricted to emergencies and for those patients whose gastro-intestinal tract is intolerant. It is conceivable that glucose administered intravenously may supply the skeletal and cardiac muscles and

the central nervous system directly without the intervention of the liver and it is frequently so employed. The rectum is intolerant to glucose in adequate amounts and this avenue of administration should be avoided.

The advantages to be gained by insuring a high carbohydrate intake in the presence of both acute and chronic hepatic disease should be appreciated. The physician should be alert to recognize the presence of hepatic disease even when "silent" and should prescribe a high carbohydrate dietetic regimen when liver damage is suspected to exist. The time element is important. Apparently there is never a time too soon in acute cases nor too late in chronic hepatic disease but that beneficial results may accrue from insuring an adequate glycogen deposit in the liver by a high carbohydrate intake.

It has been sufficiently demonstrated that the access of whole bile to the intestinal tract is essential for the maintenance of the life of dogs. Dogs with a complete biliary fistula die within a few weeks with evidences of malnutrition (Ivy, Whipple). It seems that the human subject is more tolerant in this respect; however, the presence of bile in the intestinal tract is known to play an important role in the assimilation of fats in man. Therefore, the administration of whole bile (dessicated oxbile may be used as a substitute) by mouth, stomach tube or nasal catheter to patients with diffuse hepatic disease, or those with a complete biliary fistula, should be a rational therapeutic procedure and form a part of the routine management.

The insuring, if possible, of adequate drainage of the extrahepatic bile passages should form a part of the routine management of patients with manifest hepatic disease. Meltzer, many years ago, noted the effect which alkalies played in the control of gallbladder drainage. Subsequently, Lyon developed and expanded this theme and the so-called medical drainage of the gallbladder has been practiced by many with varying degrees of success. The prescription of alkalies or alkaline mineral waters may, therefore, logically be included in the routine management of hepatic disease.

In recent years roentgenologists have used a fat breakfast to empty the gallbladder of dye in routine cholecystography. The desirability of prescribing a high fat diet in patients with hepatic disease to facilitate clearance of the extrahepatic biliary duct system, therefore, presents itself. Clinical observation would indicate that patients with hepatic disease tolerate fat poorly in spite of its known tendency to empty the gallbladder. While the exact explanation of intolerance to fats is not known it probably has to do with difficulties occurring within the liver cells

in the course of fat metabolism. The frequency with which fat deposits are encountered within damaged liver cells as a result of many toxic agents would indicate that this may be true.

CONCLUSIONS

The outlook for patients with both acute and chronic hepatic disease depends to a large extent upon the peculiarities inherent in the liver parenchyma. Of these the ability of the liver cells to withstand damage and still regenerate, the accident of distribution of connective tissue deposits and the success in establishing a compensatory circulation in the presence of progressive obstruction of the portal blood flow may be mentioned.

All these factors may with time establish a relatively normal liver functional status. Time, therefore, is an important item. In acute cases with manifest hepatic damage no time should be lost in adopting a plan of management which protects the mass of liver cells and favors their functional activities. Even in the chronic case with hepatic damage approaching functional incompetency a regimen favoring the functional activity of the liver may still be successful even in the presence of grave hepatic disease.

8 South Michigan Blvd.

PREVENTION OF CHILLS FOLLOWING TRANSFUSION OF CITRATED BLOOD

Richard Lewisohn and Nathan Rosenthal, New York (Journal A. M. A., Feb. 18, 1933), state that post-transfusion chills are avoidable. They are not due to the mixture of the blood with sodium citrate but to impurities in the instruments or solutions used in blood transfusion. For the removal and elimination of foreign protein from the distilled water, or old blood from the apparatus, triple distilled water is used for the preparation of sodium citrate (30 per cent) and sodium chloride (0.85 per cent). After each transfusion, all parts are separated and washed in cold water for the removal of blood, then washed in a dilute solution of green soap to which compound solution of cresol has been added to make a 1 per cent solution and then thoroughly rinsed in tap water, placed in a large pan containing sodium hydroxide (0.1 per cent solution) and boiled for five minutes, and then transferred to a large pan containing distilled water, to remove the sodium hydroxide. The glassware and rubber tubing are again washed with triple distilled water and are ready to be assembled and sterilized, either in metal boxes or in special bundles, in the autoclave. Elimination of the foreign protein element will reduce the number of chills to a minimum. The use of solutions (sodium citrate and physiologic solution of sodium chloride) prepared with triple distilled water is indispensable. The incidence of chills following citrate transfusion has been reduced from 12 to 1 per cent. If instruments and solutions are prepared properly, citrate transfusion can be used with safety in every case requiring a blood transfusion.

THE RELATIONSHIP OF THE LIVER TO OTHER VISCERAL ORGANS IN DISEASE

FERDINAND C. HELWIG, M.D.

KANSAS CITY, MO.

The pathological interrelationships of the liver with other important organs and tissues are so manifold that it is useless to attempt to cover them all or even a major portion of them in a short paper of this character. It is my desire in this discussion to call attention to some of the more important and, in some instances, infrequently mentioned correlations which seem to have potential or actual clinical value.

When we think of the liver and its various functions we readily see how intimately related it is to many other important physiological processes. When we consider its role in carbohydrate metabolism it becomes apparent at once that there is an important relationship between the liver and pancreas, particularly in regard to maintenance of sugar balance and all of its subtle ramifications. In the deamidization of the amino acids and the synthesis of urea the liver again has widespread relationships to other organs, and in the matter of bile pigment metabolism we find a close connection between the bone marrow, spleen and liver. The discovery that the liver contains an active substance which is effective in the treatment of pernicious anemia demonstrates an apparently definite correlation between the liver and the blood. In the more obscure problems of fat metabolism the liver appears to be intimately correlated with the connective tissue fat depots, and in the metabolism of cholesterol some observers have apparently found a close interrelationship between the liver and the adrenal gland. Some rather hazy connections between the liver and the thyroid, the liver and the brain (as in the peculiar progressive lenticular degeneration which is sometimes observed as a familial condition) and even between the liver and the inner ear may be found in the literature.

Liver and Spleen.—Since the early days of careful morbid anatomical studies a frequent association of splenomegaly with liver cirrhosis has been observed. It is likewise well known that in such conditions as heart failure, leukemia, lymphogranulomatosis, malaria, syphilis and certain infections the liver and spleen may show certain apparently related manifestations.

Liver cirrhosis in itself presents some of the most knotty problems with which we are confronted today and the very close association between cirrhosis and splenic changes is still puzzling

both physiologists and pathologists. In the light of our present knowledge the most logical way to approach the subject is to follow the path blazed by McNee¹ and assume that cirrhosis represents a process of gradual evolution wherein the primary lesion depends on slow progression with frequent repetition resulting in a degeneration of liver parenchyma followed by regeneration of new liver cells and fibrous tissue replacement of the destroyed areas. This process of destruction and reconstruction is frequently repeated, each time with more fibrous tissue replacement, the final result being that an entirely new liver parenchyma, in fact an entirely new kind of liver, is evolved. In this new liver wherein new vessels and their branches and new bile ducts and their tributaries are found, complete reconstruction of both the portal and hepatic vascular systems takes place, to say nothing of the production of an entirely new and different biliary tree. This, roughly, is the theory of the pathogenesis of hepatic cirrhosis as outlined by McNee.¹

In analyzing this picture we see many important accompanying features. Foremost is the distortion of the vascular system. McIndoe² by his beautiful injection and digestion experiments showed that the parenchymatous cells of the liver were, in portal cirrhosis, slowly removed from the portal blood until they became nourished almost entirely by the branches of the hypertrophied hepatic artery. The natural result of this would be that all the usual metabolites normally brought to the liver by the portal system would be now more or less diverted through collateral channels finally to reach the liver by way of the hepatic artery.

The spleen, like the liver, has a generous content of endothelial reticulum and hence it undoubtedly has certain detoxifying functions. Therefore, in cases of advanced cirrhosis where there is a marked increase in portal venous pressure the outflow of blood from the spleen is definitely retarded or even almost obstructed with a resultant passive hyperemia. Furthermore, the toxins normally brought to the liver through the portal vein are now shunted into the peripheral circulation and probably reach the spleen and liver at about the same time. These two facts seem to explain the concomitant splenic enlargement found in advanced cirrhosis and this is the theory offered by McNee in contradistinction to the older hypotheses.

Of clinical interest is the finding that in the troublesome complicating bleeding of esophageal varices, seen so frequently in atrophic cirrhosis, certain selected cases show good results from splenectomy. This procedure removes 20 per cent of the blood entering the portal vein.

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Although the question of ascites in portal cirrhosis is one of the most obscure with which we must deal, it may be of interest to mention that in cases of experimental cirrhosis in dogs it has been possible to keep them free from ascites for long periods by merely keeping them on a pure carbohydrate diet. It has also been possible to produce ascites almost immediately by simply adding some protein to the diet.

Other splenic diseases associated with changes in the liver are Banti's disease, the hemolytic anemias and certain diseases characterized by extensive lipoid changes in the endothelial reticular system. These diseases are rare and hence are largely of academic interest; they include Gaucher's disease, Niemann's disease and Pick's disease, and in many respects all are quite similar.

Liver and Pancreas.—In the pathologic interrelationship of the pancreas and liver we are confronted with some of the most difficult problems of carbohydrate metabolism. The frequent concomitant pancreatic changes observed in disease of the biliary tract are too familiar to merit further comment. In toxic cirrhosis of the liver Althausen³ has shown that the regenerated liver tissue maintains the carbohydrate metabolism-regulating mechanism even when there is marked impairment of dye excretion. This information he thinks might be of value in clinical differential diagnosis. In acute chloroform poisoning the carbohydrate level was reduced but was restored to normal during the stages of recovery of the liver, hence, it seems likely that the character of the damage was of considerable importance. It is likewise interesting that pancreatic changes were not encountered and seemed to play no part in the altered carbohydrate metabolism in chloroform poisoning.

The problems encountered in glycogen storage are also of great interest and show numerous variations. Normally this product is stored in the periphery of the liver lobule and there seems to be a constant ratio regarding its accumulation in different portions of the liver parenchymal cells. Glycogen is found in both the nucleus and cytoplasm and strangely enough when the cytoplasm is rich in glycogen the nucleus contains little or none while the contrary is likewise true. There is a very definite relationship between insulin and glycogen storage since it seems to be insulin which promotes such a storage normally. In diabetes abnormal glycogen storage takes place with deposits in the renal tubular epithelium, cardiac muscle cells, leukocytes, etc., with a corresponding diminution in liver storage. Ravdin⁴ has shown that a damaged liver has a strikingly decreased

ability to synthesize and store glycogen, while in severe diabetes after insulin treatment there is a very marked increase in the storage of liver glycogen with a similar striking decrease in the pathological store of kidney glycogen as well as that stored in other organs. In this respect, however, the skeletal muscle is an exception as Mann⁵ has shown that glycogen once stored there is never released. In cirrhosis of the liver, as well as in other types of hepatic damage, there is also a great decrease in the storage capacity of the liver; hence, diabetics with a complicating cirrhosis do not react as well under insulin therapy as those without cirrhosis. When we recall the relationships previously mentioned in discussing the problems of cirrhosis, wherein a perverted blood supply to the regenerated hepatic parenchyma was observed, we can see a logical explanation for this phenomenon.

Mann⁵ demonstrated that the removal of the pancreas in no way affected the changes in sugar balance in liverless dogs since the hyperglycemia resulting from insufficient insulin was rapidly changed to a hypoglycemia, the only difference between the dog with only the liver removed and the dog with both liver and pancreas removed being that it took a little longer to produce hypoglycemic convulsions in the latter animal.

In depancreatized dogs certain liver changes have been noted which are closely associated with metabolic disturbances resulting in marked liver alterations. Allen⁶ and his coworkers in 1924 observed depancreatized animals that had been kept alive on insulin for periods ranging from one to seven months. These animals died with such symptoms as depression, apathy, jaundice and anorexia, vomiting and diarrhea. Huge fatty livers were found at necropsy. If raw pancreas was given along with the insulin the animal lived a great deal longer. Interestingly enough, in certain of Fisher's⁷ depancreatized dogs which were not given insulin in the last few days prior to death, the dogs died with hypoglycemic convulsions and the sugar disappeared from their urine. The constant finding of extensive fatty changes in the liver suggested a serious disturbance in lipoid metabolism. Also, Hedon⁸ found that when he discontinued the feeding of raw pancreas his depancreatized animals became sensitive to insulin and that it was necessary greatly to reduce the quantity of insulin given in order to avoid dangerous hypoglycemia.

This apparent paradox was explained by the liver findings at necropsy on the theory that the liver had become so diseased that it could no longer maintain the carbohydrate balance. The

extensive fatty metamorphosis found in this liver was explained on the basis of the inability of the liver to desaturate fats properly. Hershey and Soskin⁹ believed that some intermediate product in fat metabolism might be used to feed the animals and thus prevent the extensive fatty metamorphosis. They found that by feeding lecithin, which is a phospholipin and is known to be important in fat metabolism, they were able to keep the dogs alive indefinitely on a diet of lean beef, cane sugar, lecithin and insulin.

An interesting clinical corollary to this experiment is the not infrequent finding at necropsy of massive fatty infiltration of the liver in some patients dying with juvenile diabetes. It might be of interest to try lecithin feeding in certain cases of recalcitrant juvenile diabetes where there is a serious disturbance in fat metabolism.

It must be mentioned that fatty infiltration of the liver is by no means constantly present in patients dying from diabetes and that in about 2 per cent of these cases a type of lipoid deposit is found entirely different from the massive infiltration which was discussed in the preceding paragraph. This infiltration consists of a deposit of fat in the reticulo-endothelial cells of the sinusoids and is usually accompanied by an even more marked lipid infiltration of the spleen. The lipoids in this condition consist largely of cholesterol and varying proportions of neutral fats and fatty acids. This condition illustrates another pathologic interrelationship involving the liver and spleen in a rather striking manner at times. This condition can be readily differentiated from those rare lipid metabolic diseases such as Gaucher's disease, both in the chemical composition of the lipoid cells and in the distribution in the spleen since in diabetes the fatty substances are deposited in both the pulp and the malpighian bodies.

Liver, Blood and Bone Marrow.—In pernicious anemia the red blood cells are seen to be destroyed within the body by ingestion within the endothelial reticular system. The liver shows definite histological changes; namely, a marked pigment content in the reticulo-endothelial cells of the sinusoids, and the presence of erythoblastic proliferation in the sinusoids. Moreover, there is a very active multiplication of immature red cells in the bone marrow.

The exact role played by the liver in pernicious anemia, aside from the microscopic findings just mentioned, is still controversial. Such investigators as Whipple, Minot and Castle, believe that pernicious anemia is a true deficiency disease in which the red cells contain an insufficient amount of some constituent in their

stroma. This constituent is thought to be probably some protein derivative which completes the maturation of the red blood cell. Feeding liver seems to supply this necessary protein. Such investigators as Castle¹⁰ and Cheney¹¹ believe that this "protein derivative insufficiency" may be dependent not only on the inadequate intake of readily available protein such as is found in liver and stomach but also in part on the inadequate digestion of less available protein substances such as beef. Cheney¹¹ has suggested another correlation with the liver by showing through his studies of gastric and duodenal contents during fasting that there is a marked insufficiency of pancreatic enzyme, notably trypsin, in addition to the gastric achylia; and by feeding artificial gastric contents, i.e., beef treated with hydrochloric acid, pepsin and trypsin, he was able to produce the same remissions in pernicious anemia as by the use of liver extract. Therefore, we find from the foregoing an apparent close interrelationship between the liver, bone marrow, blood and even the pancreas in pernicious anemia with anatomic alterations in the first three which are almost constant in character.

Mann⁵ showed that there is a definite relationship between the liver and bone marrow in bile metabolism. He removed the liver, spleen and entire gastro-intestinal tract of dogs and still was able to produce jaundice in the animal and the blood serum showed an indirect van den Bergh reaction. He believed that although the liver might form bile, the bone marrow was the one great and important site of formation of this substance, while the liver probably acted for the most part as an excretory organ. It is now believed that bilirubin is changed in some obscure manner by its passage through the liver cells so that it will hook up chemically with Ehrlich's diazo reagent in the absence of alcohol whereas previous to this passage it required the assistance of alcohol to complete the reaction.

Another disease which affects the blood, liver and bone marrow and, in this instance, the spleen, is so-called "hemolytic jaundice" wherein we find a grave secondary anemia with normal sized red cells which show only one definite abnormality, namely, an increase in fragility. In this condition the spleen is greatly enlarged and there are definite and typical microscopic findings. We find the blood spaces remarkably overengorged with red cells and, in the words of McNee,¹ "the actual structure can only be made out satisfactorily when the spleen has been removed by operation and allowed to empty itself of blood before fixation. The blood sinuses are then seen to be relatively empty while the pulp is absolutely stuffed with

red blood cells of normal size and shape. Many of the endothelial reticular cells contain red blood cells, whole or broken up, or the hemosiderin pigment derived from them." The bone marrow shows some signs of low grade increase in red cell proliferation. While the liver shows only active phagocytosis of red cells by the sinusoidal endothelium, many of the Kupffer cells contain intact or broken down red cells and blood pigment. The reason for the spectacular cure of hemolytic icterus by splenectomy still remains a mystery.

Liver and Kidney.—Under this caption I would like to discuss briefly a syndrome wherein an apparently definite relationship has been observed between the liver and the kidney in certain cases of liver damage. Drs. Schutz,¹² Kuhn,¹³ Orr,¹⁴ and I¹⁵ have observed a number of cases clinically wherein such a relationship seemed to exist. In two cases of traumatic pulpification of the liver we found high grade nitrogenous retention and subsequent death from uremia in both instances. The kidneys demonstrated the picture of an advanced tubular degeneration. We have likewise observed such a series of findings in five patients with chronic cholecystitis and hepatitis who died following cholecystectomy. A condition clinically resembling uremia, where preoperative function tests and blood chemical studies showed no evidence of renal damage, was present. In one instance of metastatic liver malignancy with massive interstitial hepatic hemorrhage, and in one instance of ascending pyelophlebitis of the portal vein with microscopic portal tributary abscesses and advanced parenchymatous degeneration of the liver, we saw death from uremia with striking retention of blood nitrogen, marked oliguria, hemorrhages from the gastro-intestinal tract and other mucous surfaces. Experimentally, we have been able to cause temporary blood nitrogen retention by trauma to the liver.

As a result of these clinical and necropsy observations as well as experimental studies, we have come to believe that there may be some potent toxin elaborated in the damaged liver which acts more or less specifically as a tubular toxin on the kidney.

SUMMARY AND CONCLUSIONS

An attempt has been made to show a few of the far-reaching ramifications of liver pathology as well as to demonstrate some of the close interrelationships which exist between the liver and other organs and tissues. One possible explanation for this close relationship to the spleen, particularly in cirrhosis, is doubtless due to the liver containing abundant endothelial

reticulum. For the same reason the liver and spleen are close brothers of the bone marrow and all three are affected to some extent by liver disease. In such conditions as splenic anemia, hemolytic icterus and pernicious anemia, these three tissues seem to play a rather constant and definite role. This triple relationship is also of great importance in the problems of bile pigment metabolism and in some of the obscure diseases of lipid metabolism all three tissues may show involvement. The pancreas and liver are intimately correlated in the physiology of sugar balance and glycogen storage as well as in certain phases of lipid metabolism; in the latter, on some occasions, the spleen may show definite changes. In Addison-Biermer anemia the liver, bone marrow, blood, stomach and pancreas may all show a definite interrelationship. And, finally, as the result of hepatic damage, the kidneys may show striking functional and anatomic alterations.

St. Luke's Hospital.

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ATOPY TO ACACIA (GUM ARABIC)

Aaron D. Spielman and Horace S. Baldwin, New York (Journal A. M. A., Aug. 5, 1933), present a case of bronchial asthma due to sensitivity to acacia. The sensitivity was confirmed by clinical history, direct skin testing and passive transfer. Efforts to find positive reactions to skin tests on patients following infusions of acacia have been unsuccessful.

CIRRHOSIS OF THE LIVER

GEORGE H. HOXIE, M.D.

KANSAS CITY, MO.

As Osler points out, the many forms of cirrhosis of the liver have one feature in common, i. e., an increase in connective tissue. If we hold to that fact and refuse to be led astray by the many classifications presented in the literature and the discussions of new forms it will clarify our thinking on the subject.

First of all, it would become thereby apparent that a cirrhosis of the liver is the final stage of a pathological process which has been long in the making. Most authors admit this fact when they say that the clinician sees the patient only after the condition has been completely developed and is practically incurable. The acceptance of such a statement as a fact would result in our efforts being directed toward establishing the diagnosis early.

The extent of the fever for classifying cirrhosis may be seen in any half dozen books on the subject. To illustrate, let me quote from only four. Thus McRae, in Osler's "Principles and Practice of Medicine," says there are five types of primary lesions any one of which may lead to cirrhosis: toxic cirrhosis, infectious cirrhosis, pigment cirrhosis, syphilitic cirrhosis and alcoholic cirrhosis. Chauffard uses three general classifications: vascular, biliary and capsular. Adami names eight groups the first three of which he considers of particular importance. These eight are: (1) portal, (2) biliary, (3) obstructive, (4) paracellular, (5) arterial, (6) contralobular, (7) secondary, (8) sporadic. Rowntree has an elaborate classification: First, portal or ascitic cirrhosis subdivided into portal cirrhosis with ascites and small liver; portal cirrhosis with ascites and a large liver; portal cirrhosis with ascites with jaundice; large liver without ascites, portal cirrhosis in the preascitic stage. Second, biliary or icteric cirrhosis subdivided into biliary cirrhosis without extrahepatic obstruction; biliary cirrhosis with extrahepatic infection, and biliary cirrhosis with ascites.

The reaction to all this furor for classification has been the development of a new school of writers, the unitarians, who believe that the basic conditions are always the same and that one finds merely the variations of this basic type of pathogenesis. Althausen¹ of San Francisco presents this theory as follows: "Knowing that cirrhosis of the liver is the result of interplay of necrosis, regeneration and sclerosis, it is not

difficult to see that the relative prominence of these processes accounts for the terminal picture seen by the clinician and the pathologist. In the clinic we have at the one extreme the toxic cirrhosis of Mallory caused by repeated attacks of subacute yellow atrophy of the liver; the end result, that is, of massive necrosis and extremely vigorous regeneration of the hepatic parenchyma with little interstitial fibrosis. At the other end of the scale we see the atrophic type of necrosis resulting from several decades of steady drinking in susceptible persons characterized by extensive penetration of fibrous tissue into the hepatic globules. The occurrence of all possible grades of transition between these outstanding types of cirrhosis is of fundamental significance. The unitary conception of the genesis of cirrhosis of the liver is important because it focuses attention on the necrotizing agent, instead of on the anatomical diagnosis, and in the individual case is conducive to the earlier recognition and treatment of this disease."

The practical problem then, is to outline the symptomatology of the hepatic conditions which may be expected to lead to fully developed cirrhosis later on.

For generations liver insufficiency has been considered the basis of many of the functional disorders occurring throughout life. The experimental proof of this insufficiency has been lacking and still is lacking in spite of the many researches now being made on liver function.

One of the earlier definite statements on hepatic insufficiency and symptomatology is to be found in Rachford's "The Neurotic Disorders of Childhood," published in 1905. He thought of the liver as a detoxicating agent the insufficiency of which produces the various recurrent symptoms of headache, vomiting and biliousness in childhood. In his discussion of the cyclic vomiting of childhood he pictures thus the function of the liver incompetency, as he calls it: "A functional incompetency of the liver is, I believe, an all-important factor. The liver in these cases is probably, by heredity, functionally incompetent, and, in addition to this, it is perhaps called upon by reason of the constitutional gouty taint to do an unusual amount of work in converting ammonia and the purine bodies into urea. Under these conditions we have periods of temporary functional incompetency on the part of the liver, and as a result the autotoxins and intestinal toxins are poured into the general circulation and produce, in some instances, recurrent vomiting, and in other instances, migraine. In a few days, when these poisons have been eliminated and the liver has resumed its function, the acute attack is

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1. Althausen, T. L.: Etiology and Pathogenesis of Hepatic Cirrhosis, *Ann. Int. Med.* 6:1080-1086 (February) 1933.

over." He believed that epileptiform and other periodic explosions might be charged up to the liver. In other words, the prevention of cirrhosis may begin in childhood.

The question of relationship between hypertension and liver cirrhosis is still without final answer. My own reaction to observations made in my practice would indicate that when the diastolic pressure is held steadily at 120, 130 or even 140, the postmortem will show a chronic interstitial hepatitis. This, I think can be demonstrated from protocols of illness and post-mortem examinations. Therefore, as a practical application of this thought, one should consider the possibility of the presence of an interstitial hepatitis in case of hypertension wherein it is the diastolic rather than the systolic which remains above normal. In other words, I am inclined to think of the hepatic rather than the renal arteriolosclerosis as the cause of the rise in diastolic pressure. I find support for this clinical opinion in observing at postmortem examinations that the renal lesions seem more recent than the hepatic. Another support is the rarity of urinary abnormalities in beginning hypertensive disease.

Of course the majority of such patients die from myocarditis or similar cardiovascular failure. With our present emphasis on the study of the heart in all cases of substernal pain we are liable to neglect the hepatic factor and report simply the terminal pathology.

In passing let me say that I think we have not been hearing as much about cirrhosis of the liver in America recently as we did formerly because we have been classifying the deaths as due to myocarditis and other forms of heart disease, whereas, years ago we would have classified them as cirrhosis of the liver.

The diagnosis of liver insufficiency is not easy. We are lucky if we find an icterus or a pruritus due to subacute icterus. We are lucky if we find the liver greatly enlarged or greatly diminished in size. The pains in and about the liver region, particularly those running through to the back which are hard to distinguish from renal pains or those from the head of the pancreas, are probably only present when the capsule has been distended or when the biliary ducts become obstructed. The formation of xanthomata and other evidences of cholesterol dyscrasia, should also lead us to make a survey of the functions of the liver.

The chemical studies of the blood still are too uncertain in their significance to enable us to draw far-reaching conclusions from them. The van den Bergh becomes positive, as does the icteric index, in conditions of which we are already sure from clinical evidence. Therefore

they are of help only in making differential diagnoses.

In some cases the use of the duodenal tube and the injection of a dye such as the bromophthalein, assist us when they show that the dye is excreted slowly, or practically not at all. In early cases of hepatitis, even of the interstitial variety which we call cirrhosis, the differential diagnosis from gallbladder disease may sometimes be made by the roentgen ray methods of Graham and his colleagues.

C. H. Mayo² says: "We have many means of making a diagnosis now, but we have made no progress in the last thirty years in getting at diseases of the liver and gallbladder disease in its early stages. . . . Very few people fifty years of age have normal livers. Many have gallbladders that are, or have been, overworked, with or without adhesions to the stomach and the duodenum. . . . The pain in the back which is attributed to the liver may be caused by associated disease at the head of the pancreas."

By "overwork" of the gallbladder Mayo apparently means long intervals between meals so that the gallbladder is forced to hold and concentrate too much bile.

Bethea points out that the early subjective symptoms of cirrhosis may be so indefinite as to be classified merely as evidences of neurasthenia. "The patient may feel weak and listless and complain of lowered physical and mental efficiency. There seems to be particularly a tendency to mental depression and instability. There may be pain or tenderness in the region of the liver and spleen, or the pain may be referred to the distribution of related nerves, particularly to the back in the region of the right scapula, or the right shoulder. Often this first takes the form of discomfort, or a sense of weight."

Thus the matter resolves itself to a consideration of the possibility of the presence of liver dysfunction in cases of migraine, epileptiform seizures, biliousness, as well as in asthenia, neurasthenia, and similar disorders which we are tempted to ascribe to psychic or emotional causes. To put the matter otherwise, if we are to do justice to our patients in the matter of preventing cirrhosis of the liver with all its sufferings, we must consider the possibility of these patients having a metabolic disorder as the background for their symptoms.

The first attack on the liver usually precedes by several years the cirrhotic syndrome. The hepatic symptomatology may present a development like this: There are functional deficiencies which are for a long time partial or transient.

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There are periods of dyspepsia, sudden anorexias, alternations of diarrhea and constipation, attacks of icterus or of transient subicterus. There may be progressive emaciation without detectable cause. Sometimes among those patients one can see faint signs of hepatic degeneration, as the presence of urobilirubin or of intolerance for sugars, but in general, the functional disturbances are less than what an examination of the living liver parenchyma would lead us to suppose would exist.

When we turn to the treatment of all these precirrhotic liver conditions our theory of the pathogenesis becomes important. If we accept Guy Albot's conclusion that hepatitis and cirrhosis are all one process, that it is a matter of the speed with which the pathology develops and that the basic condition leading up to cirrhosis is the obstruction of this or that group of ducts or vessels, treatment becomes a matter of opening the ducts as much as possible and securing a greater flow of secretion through them.

The fact that cirrhosis has not decreased during the period of the noble experiment in prohibition has made us pause in our glib reiteration that alcohol is the chief cause of cirrhosis and has made us consider that possibly many men have taken to alcohol because of their liver condition rather than that the liver condition is the result of alcohol. Nevertheless, it goes without saying, the toxic agents such as alcohol, phosphorus, cinchophen, and so forth, must be removed.

To secure the flow of the secretions from the liver, I think we should utilize Vidal's observation of several years ago that six ounces of milk has a decidedly good influence in stimulating the biliary tract. In other words, if we proceed on the theory that we need to stimulate the flow of bile, we should instead of prohibiting eggs and milk not only encourage their use in the diets but should increase the number of meals at which they are taken. I feel that for the ordinary individual suffering from hepatic insufficiency five or six meals a day are necessary if we are to secure any increase of the activity of the liver. The intercalated meals would be, of course, milk, or milk and eggs. This I know is contrary to the teaching of many of the present day practitioners but my own experience seems to justify the continuation of the practice.

As to medicines: I think we may limit them to two groups: First, bile salts; second, the mercurials.

I have seen good results follow the exhibition of bile salts in these cases but to be effective they should be administered regularly, day after day. The results are improved if one gives 2 to 3 grains of calomel once a week. Salyrgan is less

drastic in its action on the bowel and kidneys and seems to be more effective than the calomel in promoting liver function. Therefore, in a case of severe stasis the administration of salyrgan at 5 to 7 day intervals should be considered.

I am not in position to speak on the surgical treatment of a well developed case of cirrhosis. My impression is that the elaborate operations of the surgeons have proved uniformly to do nothing more than possibly prolong the patient's life for a few weeks.

I have noted that the symptoms in cases of cirrhosis are not uniform and unvarying. In fact, there seems to be a variation in the condition dependent on heat and weather, possibly also on food and emotional disturbances. When, then, the periods of exacerbation arise it is of course necessary to keep the patient in bed, to remove the ascitic fluid from the peritoneum, to cut the diet down almost to milk, to use 2 or 3 grains of calomel every 3 to 5 days and sometimes back this up with salyrgan. (I have found the salyrgan more effective than the theobromine series of cardiac stimulants and diuretics.)

If the patient survives the first onslaught of the disease and presents the more chronic condition, one must watch the state of the metabolism of calcium and sugar as well as of iron. There is liable to be a deficiency in one or more of these substances and extra supplies should be administered. I have used the laboratory reports on the quantity of sugar, the chlorides and the iron in the blood stream as the basis for the administration of these substances rather than the general rule. I have no experience with the administration of dextrose as a routine stimulant in this group of chronic conditions.

To illustrate and make definite the thoughts presented in this paper, let me refer to a few case histories.

REPORT OF CASES

The first, a veteran of the late war, was shot through the liver. He recovered but has had headaches which are more or less periodic. This headache can be kept under control only by the more or less regular administration of salyrgan, or a C. R. C. pill; i. e., some such stimulation to the action of the liver has to be given about once a week.

Another patient has suffered for some years from xanthomata about the eyes, from occasional phlebitis especially in the legs and from occasional malaise. It was found almost impossible to bring up her reaction in any way except through the stimulation of the liver function by the use of bile salts backed up by occasional doses of salyrgan.

A woman was first seen in 1919 when she was 59. She had "misery" in the abdomen. The examination was essentially negative, except the blood pressure showed 190/110. The P. S. P. renal function in the first hour gave 150 c.c. of urine with 30 per cent re-

turn of the dye; the second hour, 20 c.c. of urine with 15 per cent return of the dye. In 1921 the blood pressure was 120/100. The urine was negative for albumin, low in specific gravity. The P. S. P. renal function test at this time showed in the first hour and a half a 40 per cent return of the dye and last half hour 20 per cent, making the total for two hours 60 per cent. The gallbladder drainage test showed the appearance of the phenoltetrachlorophthalein dye in 72 minutes. In 1922 a definite enlargement of the liver was made out, although the appearance time of the dye had been reduced to 32 minutes. In 1931 she had a "stroke" with a paralysis of the left hand and foot, and at this time there were cardiac bruits, both systolic and diastolic; moisture in both bases of the lungs; the liver was not tender. No other opportunity for examination was given. In 1932 the N. P. N. was 50; the chlorides 450. The heart showed fibrillation, irregularity and the various signs of myocarditis. She died in coma with increasing mounting temperature in July, 1932. No postmortem examination was made.

I might refer to another case, a woman, where there had been a premature birth in 1918; also a therapeutic abortion in 1919 on account of high blood pressure which had reached 220. The P. S. P. renal function in 1920 was: first hour, 30 per cent; second hour, 7 per cent. The alkali reserve was normal. The patient died from apoplexy in 1926. At the postmortem, peribulbar cirrhosis was one of the important findings.

1000 Rialto Building.

JAUNDICE

DONALD R. BLACK, M.D.

KANSAS CITY, MO.

In clinical medicine one is frequently confronted with varying degrees of icterus in conditions where liver damage has not been suspected. The tendency in the past has been to assume a hepatogenic basis for all jaundice. It has of course been known for years that jaundice can and does occur without primary liver disease. It is the purpose of this paper to present clinical methods for the differentiation between types of jaundice and to review some of the facts concerning bilirubinemia.

First, it can be stated that clinical jaundice can be detected when the plasma contains more than .03 per cent bilirubin. Second, bilirubin is formed from hemoglobin in the cells of the reticulo-endothelial system, principally in the bone marrow and spleen. As Mann has shown, bilirubin can be produced in the absence of the liver although normally some can be formed by the Kupffer cells of the liver. Third, the only function of the polygonal cells of the liver, in so far as bile pigment is concerned, is its secretion into the bile canaliculi.

It naturally follows that clinical jaundice will be governed by, (1) the number of red blood

cells destroyed, (2) the functional capacity of the polygonal cells and their ability to completely handle all the bilirubin brought to them for excretion, and (3) the presence of obstruction of the bile ducts either within or without the liver.

The following chart prepared by Keefer indicates the conditions in which increased blood destruction predominates and those in which decreased liver function plays the important role in the production of jaundice. Actually both abnormalities may coexist and it is frequently impossible to differentiate pure types. Also, one type might change into the other, as for example, a toxic substance might at first produce only excessive hemolysis but later produce direct degenerative changes in the liver cells.

CLASSIFICATION OF JAUNDICE

I. Jaundice in Patients With Blood Destruction Predominating:

1. Hemolytic jaundice
2. Septic infections
 - Bacillus welchii sepsis
 - Streptococcal sepsis
3. Posttransfusion reactions
4. Malaria
5. Chemical intoxication
 - Phenylhydrazine HCL
 - Potassium chlorate
 - Arsenated hydrogen
 - Acetic acid
 - Dinitrobenzene
 - Picric acid
 - Snake venom
6. Icterus gravis neonatorum
7. Icterus neonatorum
8. Jaundice following hemorrhage into body cavities

II. Jaundice in Patients With Liver Damage Predominating:

1. Chemical poisons
 - Arsenic
 - Cinchophen
 - Chloroform
 - Carbon tetrachloride
 - Antimony
 - Phosphorus
 - Tetrachloride of ethane ("dope" water)
2. Infections
 - Pneumonia
 - Streptococcal infections
 - Tuberculosis
 - Weil's disease
 - Relapsing fever
 - Yellow fever
3. Miscellaneous conditions
 - Myocardial insufficiency
 - Cirrhosis of the liver
 - Acute yellow atrophy
 - Eclampsia
 - Mushroom poisoning (amanita phalloides)

III. Obstruction of Bile Ducts.

The liver is unique in that: (1) it has a double blood supply and is susceptible to cir-

culatory disturbances, varying grades of degeneration occurring in congestive heart failure or other anoxemic conditions; (2) it is perhaps the most sufficient of all organs; (3) it possesses a remarkable regenerative power of functionally perfect cells; (4) it has numerous separate and distinct functions such as formation of urea, excretion of bile, controlling to a large extent carbohydrate metabolism detoxifying properties, and serves as the principal storehouse for glycogen.

It can at once be seen that functional tests are of value only in so far as they deal with specific functions. The liver function tests with which I shall deal serve principally to differentiate between diffuse liver damage and obstructive lesions. The methods employed to determine blood destruction or abnormal blood formation, e. g., (1) increased reticulocyte count, (2) increased fragility of the red blood cells, (3) urobilinuria and (4) certain phases of the van den Bergh reaction, are not tests for liver function. I have gained information from the icterus index and the estimation of blood cholesterol. Valuable information is of course obtained from the clinical history given by the patient and it is extremely convenient to keep the facts noted in the above charts in mind while taking the history.

The subject will perhaps be simplified by utilizing the classification of Rich, retention jaundice and regurgitant jaundice.

Retention jaundice is usually associated with conditions which render the excretory power of the liver subnormal but results also from increased blood destruction with the formation of more bilirubin than the liver cells can excrete, the sum of the combined results being the retention of sufficient bilirubin to stain the tissues. Clinically one finds (1) increased bilirubinemia, (2) indirect van den Bergh reaction, (3) increased stercobilin in the stools, (4) urobilinuria. Pathologically the liver cells may or may not show atrophy necrosis or cloudy swelling, depending on associated conditions, but the bile ducts are patent.

Regurgitant jaundice is characterized pathologically by distended bile capillaries with numerous ruptures in their walls due either to pressure from obstruction alone or combined with necrosis of walls with resulting reflux of bile from the canaliculi back into the blood stream. Clinically one finds: (1) increased bilirubinemia, (2) direct van den Bergh reaction, (3) decreased amounts of stercobilin in the stools, (4) bilirubinuria. Urobilin is probably formed in the intestines from bilirubin, first by oxygenation to urobilogen and then palmerization to urobilin, and would not be

found in the urine in conditions which prevent the flow of bile into the intestinal tract. Urobilin can be formed in the liver in the presence of infection and occasionally appears in the urine in regurgitant jaundice.

We accept an icterus index of over 6 as indicating an abnormal concentration of bilirubin, but the test in no manner determines the nature of the increase. Figures below 6 indicate hypobilirubinemia and are found in secondary anemia. Low values serve to differentiate between primary and secondary anemias.

The van den Bergh reaction is valuable only when its possibilities and shortcomings are fully appreciated. In the first place, the bilirubin in the blood in excess of the normal amount, which of course accounts for the jaundice in hemolytic icterus or pure retention jaundice, presumably has not passed through the polygonal cells of the liver and is absorbed by the blood serum in such a combination as to make it resistant to the diazo-reaction except by the addition of alcohol and an indirect or delayed reaction occurs. The bilirubin of regurgitant jaundice, either by virtue of some hypothetical oxidation process coincident to passage through the polygonal cells or to the administration of bile salts which lower the surface tension, prevents it from combination with the serum and allows a reaction with diazo-reagent directly without addition of alcohol, a direct van den Bergh reaction.

The significance and interpretation of the van den Bergh reaction is then evident. As the bilirubin formed apparently within the reticulo-endothelial system is poured into the blood stream it is absorbed by the blood serum. This absorption protects the pigment from being excreted by the kidneys, from reacting immediately with the diazo-reagent, and from being oxidized rapidly, properties found to be characteristic of the indirect van den Bergh reaction. In pathological conditions the indirect reaction will be found when there is increased red blood destruction or inability of the polygonal liver cells to excrete the excess bilirubin. The direct reaction is found whenever substances which lower surface tension such as bile salts are poured into the blood stream because their strong absorbability prevents the bilirubin from being absorbed and, as a result, this pigment is left free in the colloidal system. The test is not infallible because when the concentration of bilirubin is high all reactions are direct and therefore the test can have differential value only when used early in such diseases as catarrhal or toxic jaundice before the high icterus indexes are produced or in pernicious anemia, hemolytic icterus or paroxysmal hemo-

globinemia in which high levels are not encountered.

The Galactose Tolerance Test.—That the liver to a large extent controls carbohydrate metabolism has been known for years. Mann, in 1927, furnished absolute experimental proof. He showed that immediately following complete removal of the liver there is a progressive lowering of blood sugar and when it reaches a certain point definite symptoms occur, death resulting in about three hours unless prevented by the administration of glucose. He states that the removal of the liver severs a part of the vital normal process of carbohydrate metabolism. This fact is utilized in diagnosing hyperinsulinism due to various tumors of the pancreas which involve islet tissue. If, for example, a hypoglycemic patient, when the diagnosis rests between diffuse liver damage and hyperinsulinism, will not respond to .25 gms. glucose, or one calorie per kilogram of body weight which represents basal carbohydrate requirement in experimental hepatectomized animals, superinsulinism must be considered probable. Clinically, abnormalities in carbohydrate metabolism occur only when most of the liver is out of function; because of rapid regenerative powers of the liver cells these abnormalities are usually of short duration.

It follows that abnormalities of sugar metabolism would be found only in parenchymatous diseases of the liver such as acute or subacute inflammations (toxic or infectious jaundice). Obstructive or regurgitant jaundice does not imply liver damage. Galactose is the most satisfactory sugar for the test. In general, we can assume that if more than 3 gm. of sugar is found in the urine in the five hour period following the ingestion of 40 gms. galactose by mouth, liver damage can be said to be present and the associated jaundice is of the retention type. This test is valuable in differentiating toxic or infectious jaundice from jaundice due to gallstone obstruction.

Cholesterol Test.—In obstructive or regurgitant jaundice hypercholesterolemia is found and, according to Barron, is explained by the fact that with impediment to the proper outflow of bile the canaliculi distend and rupture and allow the bile including pigment acids and cholesterol to pour into the pericapillary lymph spaces and blood stream. With removal of obstruction both hypercholesterolemia and hyperbilirubinemia disappear, the former being retained the longer.

Epstein has studied the reaction, both in obstructive and parenchymatous disease, produced by such substances as salvarsan, phosphorus, chloroform, acute yellow atrophy, cinchophen,

pneumonia and cardiac decompensation. He has demonstrated that whereas in regurgitant or obstructive jaundice both cholesterol and bilirubin are proportionately increased in the blood, no such parallelism exists in parenchymatous or retention jaundice. In the latter the bilirubinemia is equally as high but normal or low figures are found for cholesterol, and the more severe the disease the lower the cholesterol value. He accepts Barron's explanation for the phenomenon. The principle of this test has much in common with that of the carbohydrate tests and the results should parallel. It furnishes an easy method of differentiating between jaundice produced by gallstone obstruction and that produced by parenchymatous liver disease.

Bradycardia and low blood pressure in jaundice have always furnished a fertile field for speculation. Three theories have been advanced from time to time to explain these phenomena: (1) The bile constituents act as a poison to the intracardiac ganglia and by paralyzing their action impair the force of the beat and lessen its frequency; (2) bile salts possess a toxic action in all striated muscles, therefore the myocardium was directly poisoned; (3) the showing is the result of a stimulation or increased tone of the cardio-inhibitory apparatus. This last view is the one usually accepted at present. The bradycardia and lowered blood pressure seem to occur in retention and regurgitant jaundice. Since Traube's work in 1864, bile salts have been considered responsible for the effect on the heart as well as for most of the other toxic effects of jaundice. However, Meakins has recently investigated the subject and states that normal bile contains about 2 per cent salts in equal proportions of sodium taurocholate and glycocholate and about 8 to 10 gms. are excreted daily. During the stage of catarrhal jaundice the secretion is lessened. Bile salts reduce surface tension of liquids and will produce hemolysis of red blood cells if added to salt solution suspensions. Therefore, if bile salts were increased in the blood in jaundice, one would expect intravascular hemolysis with resultant hemoglobinuria and hemoglobinemia, rare findings in catarrhal jaundice. The red blood cells in catarrhal jaundice have a reduced hemoglobin and a reduced fragility. There is no evidence that there is an increase of bile salts in the blood of catarrhal jaundice.

King has demonstrated that the injection of bile salts has no effect on the blood pressure or pulse rate.

Harrol and Carlson were able to produce reasonably pure bilirubin and demonstrated it to be the constituent of the bile which produces the fall in blood pressure, the slowing of the

pulse and most of the other toxic effects. Another important point was brought out in their work; namely, their first preparations of bilirubin were not toxic because they were combined with calcium but when the calcium was split off the preparation was highly toxic. This furnishes experimental proof of the value of calcium therapy in jaundice.

The question of hemorrhage, slow clotting and prolonged bleeding time in jaundice has occasioned much discussion. In 1910, King and Stewart concluded that bile pigment circulating in the blood of jaundiced patients gradually absorbed calcium from the blood and tissues and gradually depleted the available supply; since then most clinicians have held that delayed clotting time was due to calcium deficiency. Later, Kirk and King modified the above explanation, accepting the hypothesis that some of the calcium was bound to the blood proteins and in jaundice disturbances in protein balance might affect the degree of diffusibility of serum calcium. Accordingly the diffusible calcium should decrease and the nondiffusible calcium should increase by being bound to protein.

Gunther and Greenburg, using more refined technic, conclude that in jaundice there is a decrease in serum protein, that the diffusible calcium is stationary and that the drop occurs with the nondiffusible calcium which, being combined with protein, is only variable inasmuch as total protein varies. They refer to the lack of hemorrhagic tendencies in parathyroid tetany and rickets, and state that factors other than pure calcium deficiency are responsible for the delayed clotting time in jaundice. Whether the bleeding is due to direct toxic effect on the endothelial cells of the capillaries or not is an open question. It is a little difficult to consider their position as final as every clinician has had favorable results by the use of viosterol, parathormone and calcium in the bleeding of jaundiced patients.

In congestive heart failure the jaundice is perhaps secondary to direct liver cell damage resulting from anoxemia, while in pneumonia and various septic conditions, as *B. welchii* infections, in addition to anoxemia one encounters increased bilirubinemia with liver cell damage.

In hemolytic icterus, both acquired and familial, the cause of jaundice is increased blood destruction with resulting bilirubinemia. The history is important. The van den Bergh reaction should be indirect unless the disease is very severe. No changes in carbohydrate metabolism or cholesterol values are noted. The icterus index indicates the amount of bilirubin in the circulating blood. The reticulocytes are increased in number, the fragility of the blood

cells is increased and there is urobilin in the urine. Splenectomy usually effects a cure.

The icterus of pernicious anemia is similar though to a lesser degree but liver function tests are negative.

Paroxysmal hemoglobinuria presents a slightly different problem. An unknown specific lysin circulates in the blood presumably due to syphilis. This lysin is rendered more active by cold temperatures and when exposed to cold the patients will become jaundiced, pass large quantities of brown hemoglobin pigment in the urine, have fever and occasionally chills, become rapidly anemic and develop splenomegalia. They will show increased icterus indices, indirect van den Bergh reactions, increased fragility of red blood cells, and if not treated the lysin will produce sufficient liver cell damage to allow enough reflux of whole bile into the circulation to produce a direct van den Bergh test and occasionally will have enough liver damage to produce disturbance in carbohydrate and cholesterol metabolism.

In Weil's disease one encounters jaundice due at first to purely hematologic reasons, later to direct liver damage as a result of either the spirochaeta or their toxin with associated early indirect and later direct van den Bergh reaction, still later abnormalities in carbohydrate and cholesterol metabolism the icterus index depending on the amount of circulating bilirubin. The disease is produced by the *Spirochaeta icterohemorrhagiae* which aside from producing blood destruction and direct liver cell damage produces renal disease, first in the tubular epithelium and later more diffuse inflammation, complete anuria, nitrogen retention, and in some cases death.

In a certain number of toxic jaundice cases the disease is preceded by urticarial eruptions, joint and muscle pains with slight fever. This is notably true of cinchophen poisoning but is noted also with salvarsan poisoning or in patients who have had intravenous or intramuscular injections of almost any substance, especially if they have discontinued treatment for awhile and then commenced again. I hesitate to introduce an already overburdened allergic tendency, but some explanation must be found for these facts, especially since they frequently respond beautifully to calcium gluconate or even calcium chloride.

CONCLUSION

In conclusion, I might state that if a careful history is taken noting the possibilities as to cause and nature of jaundice, much can be learned in every case; if this information is supplemented by liver function tests and various

blood studies in the light of the facts mentioned in the physiology of the liver, most cases of jaundice can be explained.

924 Professional Building.

DISCUSSION

DR. WARREN H. COLE, closing: I would like to call attention to the remarks made by Dr. Elliott regarding the regeneration of liver cells. The newly formed hepatic cells frequently regenerate in haphazard fashion because of lack of interstitial network, yet that liver probably would take on the functions of the body and do the work quite efficiently. He also remarked that this regeneration does not take place so rapidly in disease. This factor is probably important in determining whether a patient makes a satisfactory recovery or succumbs to prolonged illness, or even death. If the toxic factor is so great as to overcome the regenerative power the hepatic cells will lose their physiological activity, become necrotic and ultimately cause the death of the patient.

I wish to sincerely commend Dr. Helwig and associates for demonstrating the effect of hepatic disease on other organs, especially the kidney. It is conceivable to me that, through further work which he did not have time to demonstrate today, certain diseases of the kidney of the noninfectious type might be attributable to a diseased liver which perhaps may not be producing clinical manifestations of disease.

DR. CHARLES A. ELLIOTT, closing: I wish to compliment Dr. Helwig on his work. The relationship of the kidney and liver, also cited by Dr. Cole, is well worth mentioning. In yellow fever, infectious jaundice, and in catarrhal jaundice the interest has been centered on the liver. A number of the men who have been interested in these diseases have recognized that the liver lesion while outstanding may not be the primary site of attack; that, in fact, the kidney may be equally involved or even more characteristic in its reaction. The liver lesion in yellow fever is a so-called "hepatosis" and not inflammatory; similarly, the kidney lesion in yellow fever is a "nephrosis." Restitution to anatomical integrity of both these organs is effected during convalescence.

In regard to Dr. Hoxie's remark concerning the inadvisability of using a high carbohydrate diet in well advanced cirrhosis of the liver, judging from experimental evidence we must agree that following the recognition of liver damage it is never too early to insist on a high carbohydrate intake; moreover, it is never too late in the course of cirrhosis of the liver to hope for beneficial results in terms of protection against injury and favoring liver cell regeneration from a high carbohydrate diet. The reasons for this have been demonstrated by a number of men who presented papers this morning. Restitution to physiological integrity may occur in a liver that looks almost beyond hope as a result of cirrhotic processes.

CLINICAL VALUE OF HUMAN CAPILLARY STUDIES

By means of a potentiometer and a thermocouple junction in the tip of a hypodermic needle, Irving Sherwood Wright, New York (Journal A. M. A., Aug. 5, 1933), was enabled to take temperature readings of the circulating blood and other tissues. In a series of afebrile patients it was found that the intravenous temperature, taken in the median cubital, jugular or branches of the saphenous veins, was always lower than the oral, hence rectal, temperature.

ACUTE ABDOMINAL SYMPTOMS IN HEART DISEASE

A. MORRIS GINSBERG, M.D.

KANSAS CITY, MO.

As heart disease is on the increase and is today the leading cause of death it is mandatory that we become familiar with its protean symptomatology. We have known for many years that cardiac disease with decompensation may present pain and tenderness in the upper abdomen with belching, nausea, vomiting, anorexia, gaseous distention, dysphagia, jaundice and loss of weight. Such a picture suggests primary pathology below the diaphragm. Too, we may see patients who have mild decompensation and who have no telltale heart findings such as murmurs, arrhythmias, changes in the size and shape of the heart which call the attention of the examining physician to heart pathology. So it is that frequently a diagnosis of primary disease of the gastro-intestinal tract is made.

The following table outlines the most frequent heart affections which produce abdominal symptoms:

- (A) Chronic Abdominal Symptoms:
 1. Valvular disease with decompensation.
 2. Coronary artery disease with or without decompensation.
- (B) Acute Abdominal Symptoms:
 1. Coronary artery disease.
 - a. Angina pectoris.
 - b. Coronary thrombosis.
 2. Valvular disease.
 - a. Subacute bacterial endocarditis with or without emboli.
 - b. Mitral stenosis with emboli.
 - c. Congestive heart failure, right ventricle.
 3. Pericardial disease.
 - a. Acute pericarditis.
 1. Without effusion.
 2. With effusion.
 4. Arrhythmias.
 - a. Auricular fibrillation with or without emboli.
 - b. Auricular flutter.
 - c. Paroxysmal tachycardia.
 - d. Bundle branch block.

The reason for such gastro-intestinal symptoms in heart disease is well understood. There is an intimate anatomical and nervous relationship between these two systems. Because of the decompensation and the resulting portal stasis the liver enlarges and there is produced more or less passive congestion of all the organs in the abdomen. This congestion changes the gastric secretion and gastric motility so as to produce dyspeptic symptoms. The gastric distention may encroach on the diaphragm and em-

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barrass the heart and further interfere with its function. Thus a vicious circle is formed. In view of the fact that both organs, the heart and the stomach, are supplied by the vagus and the sympathetic nerves, any disturbance of the heart may cause reflex symptoms in the stomach with an interference of the normal motor and secretory functions. This relationship is further stressed when we remember that cardiac catastrophes occur during or after meals. These facts would lead us to examine the heart carefully when a patient complains of abdominal symptoms and to examine carefully the abdomen when a patient complains of heart symptoms.

In this paper I wish particularly to call to your attention those cardiac disturbances which might simulate an acute surgical condition in the abdomen. Such mistakes will recur in the future unless we have in mind those cardiac affections which have in the past caused such errors in diagnosis. As the question of operative procedure comes up for consideration, the importance of proper interpretation of such cardiac manifestations cannot be overemphasized. It is, indeed, important to make a speedy and accurate diagnosis in order to save the patient an exploratory laparotomy and thereby endanger his chances for recovery. The literature abounds with reports of many patients operated on for a supposed abdominal lesion when in fact the patient was really suffering from some form of heart disease.

We must first mention angina pectoris. In this condition the atypical distribution of pain to the midepigastrium or upper right quadrant and radiating to the back may offer a problem in differential diagnosis and may be mistaken for an acute surgical condition in the abdomen. A detailed history is more important here than it is in any other medical problem. In one fourth of the patients having the symptom, angina pectoris, there are no physical signs to be found in the examination of the heart.

These patients complain of paroxysms of oppression in the thorax or in the epigastrium brought on by some exciting factor such as exertion, a full meal or exposure to cold. Two important features not so well known must be remembered. One is that angina pectoris may come on without effort, and the other is that the attack might last up to a half hour. The vice-like pain, the ashen-gray facies with beads of perspiration on the forehead and with cold, clammy fingers during such a paroxysm, and the remarkable freedom between attacks, together with the fact that nitrites and rest will control the paroxysm, will often help in the diagnosis of this deadly symptom. Remember,

too, that during the rest period belching often quickens recovery.

One of the most perplexing problems in diagnosis, and one which offers dangerous pitfalls, is the differentiation of coronary thrombosis from an acute surgical condition in the abdomen. Twenty-three years have elapsed since the attention of the medical world was called to the erroneous diagnosis, "acute indigestion," and to the fact that these fatal cases were the result of a coronary thrombosis. No such diagnosis should ever be made today. Acute coronary occlusion or thrombosis is but one phase of coronary artery disease. The presenting symptoms will depend on several factors, viz.: (A.) The size and location of the occluded vessel; (B.) rapidity of closure; (C.) capacity of collateral circulation; (D.) amount of strain on the damaged heart, and (E.) sensitiveness of the individual's nervous system.

Typical cases with a history of previous attacks of angina pectoris will offer little or no difficulty in diagnosis, but there is a group of patients who have had no previous warning of diseased coronary vessels. The first indication of any such serious trouble is the fulminating attack of pain. The mature diagnostician who understands this clinical entity will often be hard pressed in his differential diagnosis and especially will this be true when the pain is entirely confined to the upper abdomen, or at least localized there in the beginning of this cardiac accident. Vomiting, nausea and jaundice in a very sick patient may help confuse the picture. The examination may reveal marked tenderness and rigidity in the upper right abdomen, or a questionable mass in the gallbladder region, with fever and a leukocytosis of 20,000 or so. With the above findings the physician must consider perforated peptic ulcer, acute pancreatitis, acute gallbladder disease, ruptured appendix or acute intestinal obstruction.

The previous history is important and every feature of the picture must be studied. A history of previous dyspnea or angina pectoris, or present during this attack, the same kind of pain with the same radiation only more severe and lasting as long as a half-hour or more combined with rapid, feeble and muffled heart sounds, gallop rhythm, pericardial friction rub, a low blood pressure and low pulse pressure with an alternating pulse and with rales in the right lower chest, will help the physician to arrive at a correct diagnosis. Certain characteristic changes in the electrocardiogram might lend some aid in the diagnosis; however, they may be entirely absent.

Attacks of angina pectoris are sometimes encountered in subacute bacterial endocarditis.

When the seat and radiation of pain are atypical it may simulate an acute surgical condition in the abdomen. A more common abdominal complication is infarction of various viscera from emboli arising from the intracardiac thrombosis. If these emboli are large and affect vital areas a speedy death may follow. Mesenteric, renal and splenic infarction may produce such acute symptoms that, unless the diagnosis has been previously made, might offer a diagnostic problem. The fever, the *café au lait* color, the secondary anemia, the visible petechial hemorrhages, the splenomegaly, the knowledge of a previously diseased valve and the positive blood culture will call attention to this low grade fatal infection, subacute bacterial endocarditis.

In mitral stenosis it is not uncommon for pieces of thrombi to be thrown off and land in the abdominal viscera and produce acute symptoms in the abdomen.

A patient with heart disease might have some trivial circumstance precipitate congestive heart failure. A slight respiratory infection, overeating, excitement, or slight overexertion, might be the precipitating factor. If the right ventricle bears the brunt of this strain the pain and tenderness in the right upper quadrant, due to rapid congestion of the liver, with the various gastro-intestinal symptoms above enumerated which eating aggravates, might offer diagnostic difficulties. Here, the knowledge of previous heart involvement with the associated cardiac findings and the edema, oliguria and cyanosis which might be present, will clearly rule out the abdomen.

Clinically and experimentally we have found that visceral pericardial involvement produces no pain. When the adjacent structures such as the pleura or the diaphragmatic parietal pericardium is involved, pain is produced. In rheumatic heart disease with pericarditis and adjacent involvement, particularly in children, the first symptom (it may be very sudden) will be pain. This pain may be very severe and radiate to the abdomen. This abdominal pain with nausea and vomiting might suggest abdominal pathology. When a pericardial effusion is large enough to compress the hepatic veins, which open into the inferior vena cava, enlargement of the liver with marked tenderness on pressure will result. If the effusion is rapid in onset, the quick engorgement of the liver might give rise to the possibility of surgical intervention. The history of onset of the illness, together with cardiac signs, will usually point to a correct diagnosis. In pericardial effusions the roentgen ray is invaluable.

Various arrhythmias have been reported in the

literature as being responsible for acute symptoms in the abdomen. Unnecessary operations on these patients are recorded.

One of the commonest arrhythmias is auricular fibrillation. Mitral stenosis, thyrotoxicosis, hypertension and coronary heart disease are frequently complicated by auricular fibrillation. In this condition the auricles do not contract. The establishment of this abnormal rhythm occurs instantly. Thus may be produced rapid engorgement of the liver with sudden pain in the upper abdomen. When nausea, vomiting and other gastric symptoms are present abdominal surgery is suggested. Clinical recognition of this complete irregularity is easy and together with other cardiac signs point to the heart as the primary seat of involvement. It is possible, however, to find absolutely no cardiac signs except this irregularity.

An important complication of auricular fibrillation is embolism. When emboli land in the kidney, spleen or blood vessels of the abdomen, they produce acute symptoms which might suggest a surgical procedure.

Attacks of auricular flutter and the various paroxysmal tachycardias, starting suddenly in a weakened myocardium or lasting over long periods may give rise to signs of heart failure. The engorgement of the liver with pain and other phenomena might again suggest surgery of the abdomen.

Patients suffering from heart block have been admitted to surgical services, so closely do these patients resemble the picture of those having perforated peptic ulcer. The nausea, vomiting, even blood at times, discomfort after eating, belching, rigidity and tenderness in the upper quadrant so complicate the exact etiological disturbance that such patients are often operated upon needlessly.

In all these arrhythmias an electrocardiogram will definitely establish the diagnosis. When an arrhythmia is present, one must look for signs of stasis in the lungs, liver and extremities. It is the proper policy, when abdominal pain and gastric symptoms are present, either to rule out a congested or enlarged liver or affirm its existence.

SUMMARY

It is well to keep in mind that certain groups of patients suffering from cardiovascular disease, who present a predominance of abdominal symptoms, may very likely become candidates for operative procedure. However, it must not be forgotten that both cardiac and gastro-intestinal involvement may be present at the same time.

NARCOLEPSY

E. T. GIBSON, M.D.

KANSAS CITY, MO.

Narcolepsy was first described about fifty-five years ago but has been rarely mentioned until the last few years. Recently many cases have been reported from all parts of Europe and America partly, no doubt, because the disorder is being more generally recognized but probably also because the number of cases has actually increased. In 1926 Spiller of Philadelphia remarked that he had seen more cases recently than in his entire previous professional life. In a more limited field my own experience has been similar. In the last eighteen months I have had six cases.

Of the two cardinal symptoms, the attacks of sleep and the emotional atony, the former is usually the one complained of.

The attacks of powerlessness are apparently so different from the sleep attacks that the patient may not associate them in his own mind and may remain silent about these attacks unless asked specifically. For this reason cases of narcolepsy may easily be overlooked.

DEFINITION AND SYMPTOMS

Although narcolepsy was described by Westphal¹ in 1877 it was first formulated into a definite symptom complex by Gelineau² in 1880. It is characterized by short recurrent periods of irresistible sleep and by sudden loss of muscular power following strong emotion to such an extent that the patient may fall helplessly to the ground.

The attacks of sleep may come on very suddenly without previous sleepiness. A patient may fall asleep at the table with his fork halfway to his mouth or while driving a car. A patient of mine who works in a bakery may fall asleep while icing a cake. Sometimes the attacks are preceded by an extreme desire to sleep. If sleep is resisted a state of complete muscular powerlessness with preservation of consciousness may follow. In this case a direct connection appears between somnolence and muscular atony. Sleep usually lasts from a few minutes to an hour and the sleeper is usually awakened easily and feels perfectly normal afterward.

The attacks of muscular atony are called catalepsy. Laughter is the most common incitement but any strong emotion may cause the reaction. The loss of tone may be general or may affect a part only. Wilson³ records the case of a cricketer whose right hand lost tone

when he attempted to throw the ball at a critical period in the game, or when he thought himself observed. One patient fell powerless when frightened by an angry mule. Another fell to the ground at the sight of unexpected friends at his gate.

Catalepsy is a state of complete muscular powerlessness with preservation of consciousness. The condition seems to be the same as in the cataleptic attacks but is of longer duration and without sudden onset. A form of catalepsy may occur, as it did in a case to be reported, in which muscle tone is lost gradually, the weakness slowly increasing to complete powerlessness. In one of my patients there is often a state of catalepsy on awakening in the morning. This patient though fully conscious cannot move a muscle and usually has a feeling of terror. She feels that if she can wink or move a finger she will be all right. Her roommate restores her immediately by lifting her head. One of my patients fell into a cataleptic state lasting several hours after a violent coitus, and again after laughing heartily at a comedy. Both these patients had also typical sleep attacks, and the former had cataleptic attacks also.

Of the six cases which I have studied recently three conformed perfectly to the usual type and add nothing new to the subject but three of them had unusual features which will be described.

In one of the six cases narcolepsy appeared after a severe fright. In the other five cases the disorder developed gradually without any particular antecedent. None had a history of epidemic encephalitis or head trauma and there was no evidence of brain tumor. One patient had a fetal adenoma of the thyroid which was removed by operation. The other five showed no sign of disorder of the ductless glands. In the reported cases epidemic encephalitis appears often as an antecedent and this disease has been considered responsible for the recent increase in narcolepsy.

REPORT OF CASES

Narcolepsy in Two Sisters.—B. R., aged 26, began having irresistible attacks of sleep at 24. These came several times a day and lasted five or ten minutes. After a few months, if she laughed or became angry she dropped any object she might be holding, and if the emotion were intense she fell to the ground. On two occasions when awakened suddenly after a normal night's sleep she fell into a catalepsy and lay in great distress without being able to move a muscle. She recovered immediately when her roommate lifted her head.

On one visit to my office the patient was accompanied by an elder sister from a distant part of the state. This sister said that she had the same trouble and described typical somnolent and cataleptic attacks, the latter coming on especially when anyone

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tickled her. The sisters had not seen each other since the narcolepsy began nor had they written each other about it. I have not seen nor read of any other instance of narcolepsy in siblings.

Narcolepsy With Myoclonia.—A. H. was a mule handler in a coal mine. One day a vicious mule attacked him in a narrow tunnel. He crowded into a niche in the wall and was not injured, but became entirely powerless and would have fallen to the ground and probably been killed had he not been supported by his position. From that time he had typical periods of sleep and cataplexy. There were two noteworthy features about this case. One was that while under observation in the hospital he began having myoclonic jerks over his entire body when emerging from a narcoleptic sleep. The other feature was the medicolegal aspect. He was of course seriously disabled from work. His condition had been considered as either simulation or hysteria and he had released his former employers from further liability after a totally inadequate settlement.

Narcolepsy Associated With Hyperthyroidism and Epilepsy.—H. C., a man of 38, had had an enlargement of the thyroid gland about ten years ago which subsided in a few months without producing symptoms. Four years ago, following a serious disappointment in love, he had a typical major epileptic attack and has had eight at about equal intervals since. There have been a multitude of minor attacks occurring in cycles of about thirty days with a free interval of two or three weeks. These minor attacks have been very unusual in their effect upon consciousness, being characterized by an inability to comprehend spoken words, either his own or others', although he can read, write, remember and is even able to read lips correctly although the sounds heard are meaningless. Mr. C. reports that, when he is typing during a lapse and anyone speaks to him he hears quite distinctly the words he is typing but not those which are spoken. In the summer of 1932 he began having periods of sleep typical of narcolepsy. From a subjective account and from careful observation by others these attacks have no similarity to epilepsy and the minor attacks described above continued unchanged during the months he was having the periods of sleep. During this same period there were some attacks of catalepsy which lasted several hours and fluctuated in severity. One evening at the theater he laughed heartily at a comedy and when the play was over rose with great effort and fell in the aisle. After ten or fifteen minutes he was able with great difficulty to reach his car and drive home. The next morning while riding the powerlessness returned and he fell off his horse and was carried home. I found him sprawled on a couch where he had been placed. He was unable to move his limbs, his face was expressionless but he was able to speak faintly. A cursory neurological examination showed reactive pupils, no sensory loss, absence of tendon reflexes and no Babinski sign. A similar period of muscular atony followed violent coitus. In the last few months Mr. C's thyroid gland enlarged and became nodular. While there were no characteristic signs of thyrotoxicosis, the thyroid gland was removed recently upon surgical advice.

The facts given above and others not germane to the present subject constitute a remarkable case. The features to be emphasized are the narcoleptic sleep associated with catalepsy instead of cataplexy, the relationship to epilepsy and adenoma of the thyroid gland.

DISORDERS OF SLEEP

There are two features of narcolepsy which often appear as disorders of normal sleep. Myoclonic jerks as one falls asleep are fairly common though under normal conditions they are usually single. Many normal people occasionally report states on awaking in which they are conscious but unable to move a muscle. There is often a feeling of terror and a belief that one will die unless a movement can be made.

Szymanski⁴ has recently distinguished two varieties of sleep in men and animals. Many animals and the human infant have short periods of rest interrupted by periods of activity which in length are characteristic of the species and without reference to day or night. Other animals, including the human after infancy, have monophasic sleep with one period of rest and one of activity during the day. Szymanski has shown also that many persons during their sleep at night have several periods of nearly absolute rest alternating with periods of relative activity. He points out that animals which depend mostly upon touch and smell have polyphasic sleep. Infants belong in this class. When sight is the principal means of information, sleep becomes monophasic and usually nocturnal. It seems probable that the sleep of adults results from a fusion of the separate phases of infancy, and the periods of rest and relative activity suggest this origin.

The suggestion is made that the narcoleptic attacks might be looked upon as a regression to polyphasic sleep.

RELATIONSHIPS OF CATAPLEXY

The similarity of cataplectic attacks to the immobility of the opossum and other animals when in danger is quite apparent. There is a strain of common goats from the mountains of Tennessee which fall to the ground instantly upon hearing any sudden loud noise. They remain for some time motionless with legs stiffly extended.⁵ In the experimental work by Pavlov⁶ upon conditioned reflexes in dogs, simple variations in the application of the stimulus regularly produced sleep or catalepsy or a transition from one to the other at will. These experiments establish the close relationship between sleep and immobility in normal animals and furnish a physiological analogy to the coincidence of sleep and cataplexy or catalepsy in narcolepsy.

Just as some of the manifestations accompanying sleep in narcolepsy are found in normal sleep, so the strange cataplectic attack is not without its physiological analogue. The expression "weak with laughter" describes a com-

mon experience. In an experimental study on fifty normal subjects Paskind⁷ found that in 96 per cent there was a distinct diminution of tone during laughter. Apparently, we have in the cataleptic attack of narcolepsy merely an intensification of this normal phenomenon.

NARCOLEPSY AND SLEEP

Between the essential and occasional phenomena of narcolepsy on the one hand and of normal sleep and the effect of laughter upon muscle tone on the other hand, we find an exact correspondence in kind, the differences being mostly of degree only. The close relationship between sleep and catalepsy is shown by the clinical transition of one to the other, the catalepsy on awakening of normal people and the experimental production of one or the other by Pavlov. Even the periodicity of sleep in narcolepsy suggests the underlying polyphasic nature of sleep. Narcolepsy thus appears to be a disturbance in the physiological processes underlying sleep. The familial case reported in this paper suggests that there may be a constitutional basis. Among the precipitating factors have been observed, fright, head injury, brain tumor and epidemic encephalitis; but most frequently there is no apparent cause.

INCIDENCE, PROGNOSIS AND TREATMENT

Narcolepsy occurs predominantly in males, usually in the second or third decade of life, does not endanger life and tends to disappear after a few months or years.

Many methods of treatment have been used but with one exception there has been no striking or uniform effect. The exception is the use of ephedrine. Doyle and Daniels⁹ used this drug in six cases resulting in the removal of sleep attacks and catalepsy in five cases, disappearance of symptoms in four and no effect in two. The dosage is variable. In one typical case no result was obtained with three eighth grain; with three fourth grain the symptoms disappeared but reappeared when the drug was discontinued. After another two weeks on three fourth grain the attacks again disappeared and three eighth grain every day kept the patient free from symptoms. After a month the drug was discontinued and there have been no subsequent attacks.

SUMMARY

Narcolepsy is probably a disorder of the physiological process underlying sleep. A study of this disorder furnished clinical corroboration of Pavlov's experimental conclusion that "sleep and internal inhibition are one and the same process."

Three cases are presented which show: (1) familial narcolepsy; (2) narcolepsy with myoclonia, (3) narcolepsy in which the typical catalepsy is replaced by catalepsy lasting several hours.

The most effective treatment is ephedrine.

1228 Professional Building.

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DISCUSSION

DR. HERMON S. MAJOR, Kansas City: Dr. Gibson has given an exhaustive study of these cases which present vertigo, cases that oftentimes cause the doctor to think the individual is malingering. I have a case in mind that I examined some time ago, an ex-service man who had been observed by some of the doctors at the Veterans' Hospital, and diagnosed as a malingeringer. I have not seen the man for several months, but I cannot accept the diagnosis of malingering as I think his is a case of narcolepsy. These cases are very interesting and you cannot make a diagnosis overnight as they require considerable study and observation.

MEDICAL PROGRESS HAS BEEN IMPEDED BY FALSE THEORIES

For centuries and ages the main or only defenses against disease were prayers, magic, incantations, sacrifices and taboos. Gods, devils and witches were associated with illness and death.

Depressing as these beliefs may be, some of the notions concerning illness which were prevalent in the sixteenth and seventeenth centuries, great centuries of renaissance and of intellectual curiosity as they were, are appalling, in the opinion of Dr. P. M. Ashburn, who begins a serial, "Progress in Preventive Medicine," in the March *Hygeia*.

Medicine was interpreted during those centuries according to Galen and the humoral theory of disease and to the Arabians and astrology. And neither the humoral theory nor the astrology bore relation to the facts.

When William Harvey described the circulation of the blood, one of the medical leaders of his day said that if Harvey's dissections did not agree with Galen's teachings, then the nature and structure of man had changed since Galen's day, as it could not be admitted that Galen had erred.

Jenner's teaching in regard to inoculation for smallpox was so at variance with all the teaching and knowledge of the day that it encountered violent opposition from all sides and was branded as paradoxical, useless, false, impossible, absurd and harmful. Vaccination has freed childhood today from what was its greatest menace prior to Jenner's discovery.

THE INCREASING SIGNIFICANCE OF ALLERGY IN GENERAL PRACTICE

C. J. REIS, M.D.

ST. LOUIS

As early as 1673 the condition now known as hay fever was described by a man named Beninderus, but nothing concerning the disease appeared in medical literature until 1819 when John Bostock, an English physician, described his own case of "Periodic Affection of the Eyes and Chest." In 1828, Bostock published a paper describing twenty-eight cases of this peculiar disease. The name "hay fever" was applied to the symptom complex which he described because of the general belief that the symptoms were caused by emanations from hay which was ripening during the season of the attack. This name has persisted despite the fact that a few decades later Blachley, another English physician, proved by a series of laboriously executed experiments that pollen of plants was the exciting cause of his hay fever. However, it has only been in the last two decades that a method of lessening the individual's sensitiveness to the offending pollen has been worked out. With this progress in treatment there came the opening of a new field of medicine, allergy, a branch of medicine that will be of equal importance with surgery, obstetrics, radiology, etc.

By allergy is meant certain clinical forms of human hypersensitiveness.

The prominence of allergy is due first, to its comparatively high incidence and, second, because of its close relation to diseases of the various systems of the human body.

It is estimated that about 7 per cent of the population of the United States are sufferers from hay fever, asthma or other allergic conditions such as hives, eczema, migraine and gastro-intestinal allergy. Conservative estimation shows that from 1.5 to 2 per cent of the people of the United States suffer from hay fever. About 65 per cent of all hay fever sufferers finally become asthmatic. This makes the prevalence of asthma, from this source alone, rather great but there are many causes of asthma other than the final results from hay fever. There are probably one and one half million people in the United States who suffer from hay fever and a like number who suffer from asthma. These surprisingly large figures comprise only those individuals who are suffering from allergic diseases manifested in only one system—the respiratory system. Duke

states that he does not see why any living tissue should be immune to the effect of allergy.

Undoubtedly, the most common of all allergies is the contact dermatitis. The incidence of the sensitivity of contact dermatitis as determined by deliberate testing differs with the different materials. According to Span, about 60 per cent of persons over three years of age in New York City exhibit sensitivity to poison ivy; H. W. Strauss was able to sensitize over 70 per cent of new-born by the application of an ivy extract to the skin. Brown, Milford and Coca report that 15 per cent of all persons are sensitive to the oil of ragweed pollens. Block states that 100 per cent of human beings can be sensitized with an extract of primrose.

Other allergic manifestations of the skin are found in allergic eczema and hives. It might be well to state at this time that contact dermatitis may frequently be superimposed on allergic eczema and that this presents a very complicated picture. Patients have been observed to have mild itching but no visible skin manifestations after the ingestion of food to which they are sensitive and develop a dermatitis only after scratching what appeared to be normal skin. Scratching and resulting trauma serve to introduce bacteria, chemical irritants and occasionally external substances to which the patient is sensitive. In the latter instance, a reaction is noted which simulates the positive reaction obtained in diagnostic tests. Occasionally, patients are seen whose dermatitis apparently developed only after substances to which they were sensitive had been introduced by trauma. For example, C. M. Stroud reports a patient who dated the onset of a facial dermatitis to the opening of an acne pustule and subsequent introduction of orris root. The patient was found to be sensitive both to certain foods and to orris root. Removal of the reacting foods resulted in improvement of the condition which, however, did not completely subside until orris root contact was removed.

The gastro-intestinal tract is the next system to be considered. No definite figure of the incidence of this type of allergy can be given at this time but the percentage of gastro-intestinal allergy will probably be much higher than most of us anticipate. Many of our so-called neurotic patients who have been treated for "nervous indigestion," and "acid stomach" and who have been operated on for chronic appendicitis, chronic cholecystitis and adhesions, have been cured by the removal from their diet of one or more foods to which they were sensitive. Allergic reactions within the abdomen are quite varied in symptomatology and are accordingly difficult to recognize. Reactions due to the in-

gestion of food to which a patient has become sensitized range widely, varying from brief but excruciating attacks of pain to mere discomfort described as indigestion. Colitis frequently has an allergic basis. The association of achlorhydria gastrica with allergic manifestations is of great value. Its presence frequently aids in the diagnosis of an allergic condition and its simple treatment in many instances gives temporary alleviation and possibly complete cessation of symptoms.

Closely associated with the gastro-intestinal system is the cardiovascular system. I say closely associated because of the frequent, almost consistent, accompaniment of epigastric distress, bloating, pain and indigestion with cardiac disease, particularly the anginal syndrome. Duke recently presented a paper on the "Relationship of Heat and Effort Sensitiveness and Cold Sensitiveness to Functional Cardiac Disorders Including Angina Pectoris, Tachycardia and Ventricular Extrasystoles." It is true that the reactions cited can be explained very often by finding an injury at some point in the heat regulating mechanism. Frequently, in patients in whom no abnormality whatever can be found we find a history of a febrile disease antedating the onset of symptoms, especially such illnesses as the infectious exanthemata, chorea, rheumatic fever, pneumonia and typhoid fever. The important point, however, is that the treatment, desensitization, which is allergic in type, gave relief of symptoms. G. Werley in "Is Allergy a Factor in Angina Pectoris and Cardiac Infarct?" presents a series of sixty-two cases of angina pectoris and cardiac infarction that were studied in relation to food allergy. Personal histories and skin tests indicated that 96.8 per cent of the patients were allergic to one or more foods. It is not stated that allergy is the cause of the anginal syndrome but that it is frequently a factor, "the spark that sets it off."

Probably there is allergy of the genito-urinary tract but very little has been reported in this comparatively new field. I wonder, though, how many of the cases of recurrent cystitis and trigonitis, that are subjected to frequent instrumentations and subsequent infection, have an allergic basis.

There have been no reports of allergy in the male genital organs, but Rowe has presented a paper, "Uterine Allergy," in which attention was called to the large amount of smooth muscle and mucous membrane in the tubes, uterus and vagina, suggesting the probability of allergic reactions in the female genital tract. He reports five cases in some detail, illustrating food al-

lergy as a cause of menstrual irregularities. In each instance, definite and lasting relief was obtained by the use of elimination diets. It is suggested that in cases of menstrual disturbance where gynecological lesions of all types have been carefully ruled out, skin tests with all foods and preferably with other types of allergens should be carried out. There are many cases of dysmenorrhea in which the patient herself has found relief by going on a light restricted diet for several days before the onset of menstruation. Probably a large percentage of these cases have an allergic basis.

Undoubtedly there are allergic manifestations in the nervous system. Allergic headaches are said to be accompanied by edema of the brain. That many cases of so-called migraine are allergic headaches has been rather definitely proved. In January, 1931, Charles Eyermann presented a study of sixty-three cases in which the presenting symptom was headache. In forty-four of these cases (69 per cent) the headache was improved when certain and specific foods were omitted from the diet and recurred when these foods were deliberately eaten.

There are on record a fairly large number of authentic cases of epilepsy due entirely to protein sensitization. Any case of epilepsy with a family or personal history of allergy should be thoroughly studied from the standpoint of food sensitization as a possible cause of the epilepsy. The etiology of essential or so-called idiopathic epilepsy points more and more, as recent investigations are made and recorded, to the probability that the immediate cause of epileptic convulsion arises from a disturbance of metabolism. That protein sensitization is a factor in many cases is quite probable and certainly is worthy of consideration in the treatment of this little understood and perplexing symptom complex. The medical profession must recognize allergy as one of the possible factors.

Chronic arthritis is one of the bugbears of the medical profession because in spite of numerous and varied courses of treatment, consisting of serums, vaccines, foreign proteins, hydrotherapy, rest, and in some cases surgery, many of our chronic arthritic patients slowly but persistently get worse. While we do not take issue with any of these recognized types of treatment, it remains that there are probably many cases in which allergy is a definite factor in the production of chronic arthritis. In the absence of definite foci of infection all cases of chronic arthritis should be investigated for allergy. Orange juice and milk diets have frequently given relief in cases of chronic arthritis; how many of these were allergic in nature we do

not know but it is safe to venture that a large proportion of these cases have an allergic factor.

It has been known for some time that allergic manifestations of the eye exists, the ophthalmic test being used as an aid in diagnosis. This test is in some disrepute, possibly on account of the serious damage to the eye which has been reported when the test was applied with tuberculin in tuberculin sensitive persons. The tuberculin reaction is inflammatory and appears after some hours and cannot be controlled by any known means. The atopic ophthalmic reaction, on the contrary, is limited to congestion and edema; it appears within a few minutes and it can usually be immediately controlled with the local application of epinephrine. In testing the eye for horse serum sensitivity, a drop of a 1 to 10 dilution (Park uses the undiluted serum) may be dropped in the lower sac and if there is no congestion or itching after ten minutes the presence of atopic sensitivity to the serum can be excluded, and the serum can be administered.

Allergy is closely associated with endocrine disturbances. It is well known that hypothyroidism is frequently associated with allergic conditions. Allergy is probably not an etiological factor of hypothyroidism but is a frequent complication. In any gastro-intestinal disturbance where there is an associated hypothyroidism, routine skin tests should be done as well as a roentgen ray examination. It may also be stated that the treatment of hypothyroidism often causes a lessening if not a complete cessation of allergic symptoms. I wonder if many of the gastro-intestinal upsets attributed to hypothyroidism do not have an allergic basis.

Anyone who investigates the field of allergy realizes that it is widespread in its incidence, both in regard to the percentage of allergic individuals and tissue involvement which includes practically all human tissues. It therefore remains for the physicians in general practice to make the preliminary diagnosis. The general practitioner cannot be expected to have the complete paraphernalia and technic that is required in the proper handling of allergic cases, but it is hoped that he will keep an open mind and try to realize that allergy is comparatively a common finding in daily practice.

Beaumont Building.

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DISCUSSION

DR. ELSWORTH SMITH, St. Louis: I would like to say that the point made about the relation of allergy to cardiac conditions is very important, especially in relation to the anginal syndrome. The anginal syndrome may be divided into the cardiovascular and noncardiovascular groups, and of the noncardiovascular group those associated with the digestive tract are a very important class for in this group allergy plays an important part. If an allergic manifestation in the digestive tract can be detected in cases presenting the anginal syndrome much benefit may result through treatment directed toward the control of the allergic reactions.

FUNCTIONAL DISTURBANCES OF PSYCHOGENIC NATURE

Franz Alexander, Chicago (*Journal A. M. A.*, Feb. 18, 1933), points out that psychoanalysis requires the same scientific standards as are required by physicians in dealing with the problems of human personality. The description of a psychophysiologic process can be considered satisfactory only if the psychic side is as precisely known and described as the physiologic side of the process. It may sound unusual that many of the functional troubles of the inner organs are based on the disturbances of the individual's emotional relation to his environment. In considering the whole structure of the nervous system it manifests a certain division of labor in that the relation to the environment, on the one hand, and the regulation of the inner processes, on the other hand, are divided between the cerebrospinal and the vegetative nervous system. The voluntary innervations, which are subject to the control of the cerebrospinal system, regulate the attitude to the environment; the inner organ processes are controlled by the automatic functions of the vegetative centers. A psychogenic disturbance of an organ can be considered as the last result of a disturbed emotional relation to the environment. It represents a confusion in the division of labor of the nervous system: the dividing line between the inner and foreign politics of the organism is mixed up. If a psychodynamic quantity which under normal conditions would lead to an external action becomes repressed, it takes a wrong pathway and instead of a voluntary innervation it leads to innervations in the vegetative system. Every neurosis, no matter whether it is expressed merely by psychic processes or by bodily disturbances of functional nature, is the result of a defeat of the individual in his psychic relation to the environment, in his foreign politics. Every hysterical organ disturbance is the dynamic substitute for omitted actions. The emotions and wishes to which the individual cannot give expression and relief in actions concerning the environment find expression in the unintelligible tacit language of inner organic processes.

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EPIDEMIC ENCEPHALITIS IN - ST. LOUIS COUNTY

Early in August, flashing into the public consciousness with the dramatic suddenness of a major catastrophe, an epidemic of encephalitis appeared in St. Louis County, particularly that part immediately adjacent to the City of St. Louis. Within less than a month 302 cases had been reported, the death rate varying from about 10 per cent in the city to 15 per cent in the county cases. This is all the more remarkable because no unusual prevalence of encephalitis had been reported elsewhere in the United States and its existence was unsuspected in this vicinity until a large number of cases developed. According to United States Public Health officials, this is the worst outbreak of the disease which has ever occurred in the United States and although unquestionably true encephalitis in epidemic form is of a different type from any previously reported in this country.

Although no age is exempt more adults than children have been affected, and particularly the older adults, even in the fifth, sixth and seventh decades. The youngest patient so far reported is a baby of three months, who has apparently recovered.

The striking features of the disease have been the suddenness and rapidity of onset, usually with headache, fever and nausea or vomiting. At the onset the patients often complain of general malaise and a feeling of prostration which is usually followed within a day or two by profound drowsiness, mental confusion and disorientation. Pharyngitis appears to be almost the rule in the early stages, and chills or chilly sensations have occurred in a number of instances. In severer cases convulsions and stupor have been common, usually associated with aphasia or at least some impairment of speech even when the patient is able to cooperate in the examination. Indeed, in all

but the worst cases the patient can be aroused momentarily and shows an obvious endeavor to carry out simple requests. In the majority of the well established cases there is at least a suggestion of mask-like features and almost always a fine tremor of the hand and tongue, occasionally associated with rigidity of the extremities. But perhaps the commonest and most striking of the early symptoms is definite stiffness of the neck, often though not always associated with positive Kernig and other abnormal reflexes. The diagnosis is confirmed by lumbar puncture which reveals an increase in the cell count, most of the cells being lymphocytes. Indeed, the cell count is much higher than that usually seen in lethargic encephalitis being often as high as 200 or 300 and occasionally mounting to 500 or 1000. The blood count may be quite normal or considerably elevated the most usual perhaps being a very slight leukocytosis. The Schilling differential in most cases studied has shown a decided shift to the left, often with a marked decrease in the lymphocytes.

One of the unusual features of the epidemic as so far observed is the rarity of ocular symptoms, such as ptosis and double vision. Another point in which this disease differs from encephalitis in other epidemics is the rapid improvement that occurs, so that a patient with convulsions and deep stupor may be able to answer questions four or five days later and within a week or ten days be apparently well on the road to recovery. Although it is much too early to speak of the ultimate damage to the nervous system, up to the present time residual manifestations have been happily infrequent and the majority of the patients appeared to be normal on discharge from the hospital.

There have been about 20 autopsies so far, and the lesions found have been similar to those of lethargic encephalitis except in location, being more numerous in the cortex than in the region of the basal ganglia, which probably accounts for the absence of cranial nerve involvement in so many cases. Congestion of the brain and numerous small hemorrhages are found throughout its substance, with areas of cell infiltration, especially in a cuff-like form about the vessels, but without evidence of demyelination.

Despite the fact that cases have been closely grouped within rather narrow confines contact could not be traced in most instances nor does any common factor appear such as similar water, milk or food supply. It is thought to be communicated through contact with carriers much as poliomyelitis is spread although the possibility of insect transmission cannot yet be

eliminated. In only five instances has more than one member of a family been affected.

Under the direction of Dr. J. F. Bredeck, St. Louis Commissioner of Health, a Metropolitan Health Council has been formed which includes officials from the various health departments and other interested parties in the metropolitan area. In connection with this body, a well organized research committee is carrying on an extensive investigation in search of the cause of the disease and the method of its spread. State epidemiologist, Dr. E. K. Musson, went to St. Louis to assist in studying the epidemic. Valuable assistance is being rendered in this work by officials of the United States Public Health Service; namely, Dr. J. P. Leake, epidemiologist, Dr. Charles Armstrong, pathologist, and Dr. L. L. Williams, Jr., entomologist. Dr. Leake, who was the first of the group to arrive, has repeatedly expressed his admiration for the prompt, vigorous and intelligent action of the health officers of the Council, and the able manner in which the research as to cause and methods of spread is being conducted. On August 29 Surgeon-General Hugh S. Cumming of the United States Public Health Service went to St. Louis and conferred with Government officials, Dr. J. P. Leake, epidemiologist; Dr. L. L. Williams and Dr. Charles Armstrong; state epidemiologist, Dr. E. K. Musson; the president of the Missouri State Board of Health, Dr. E. P. North, St. Louis; St. Louis Health Commissioner, Dr. J. F. Bredeck, and St. Louis Hospital Commissioner, Dr. R. L. Thompson. After an hour's conference Surgeon-General Cumming decided to summon by long distance telephone Dr. W. T. Harrison, laboratory expert in the Government service, from Hamilton, Montana, where he has been studying Rocky Mountain spotted fever, and Dr. Cornelius B. Philip, an expert in the study of insect carrying diseases.

"We have high hopes," said General Cumming, "that we may find the cause of encephalitis and a cure for it in our work here. This is a splendid opportunity to make a most comprehensive study of the disease, and we intend to make the most of it. St. Louis will have advantage of every resource the Government has at its command."

It seems likely that the present epidemic is similar to several which have occurred in Japan and which have been designated "Encephalitis B" to differentiate it from the commoner encephalitis lethargica. The largest epidemic in Japan was reported in 1924 when nearly 7000 cases occurred with a general mortality of 59 per cent and in places a mortality as high as 72 per cent. That epidemic was also character-

ized by infrequent cranial nerve involvement, sudden onset with stormy symptoms and often rapid improvement. Residuals, however, were apparently more frequent than in the St. Louis cases if one may judge by the present condition of the patients recently affected.

There have been 219 cases in St. Louis County and 101 in St. Louis City, a total of 320 at this writing (August 29). The total number of deaths is 42, a percentage of 13.1.

THE NRA

The President's Reemployment Agreement is part of a nation-wide plan to raise wages, create employment and thus increase purchasing power of the people and restore business. Many questions concerning the relationship of the profession to the NRA have been submitted to our office as well as to the headquarters of the American Medical Association. Due to the pressure under which this legislation is being made effective it has been most difficult to obtain authoritative information. Because of its national character we have awaited advice from our parent body. The *Journal of the American Medical Association*, issues of August 12 and August 19, editorially has clearly defined our relationship. We quote in part:

Probably the most significant of these questions concerns hours of work for physicians and hours of work and salaries of their assistants and attendants.

It has been definitely settled that physicians in the discharge of their professional duties are not within the terms of the National Industrial Recovery Act. A physician may work as many hours as he finds expedient and for as small compensation as he is willing to accept and he will violate no law and no federal policy.

The *Journal* last week said: "However, if a physician employs more than two persons as attendants in his office of the class of clerical employees, accountants, laborers and similar types of help, they do come under the National Recovery Act with a minimum wage and certain maximum hours of work." Because of many rulings reported from various parts of the country that were inconsistent with this statement, a ruling was requested from General Thomas S. Hammond, executive director of the President's reemployment program. The policy stated in *The Journal*, said General Hammond, concerning physicians as employers of certain types of help, is sound and has his approval. Rulings from other sources may be disregarded.

The medical profession, as far as concerns its private practice need have no immediate concern over the stipulations of this act. The legislation is not intended to interfere with the personal relationship between physician and patient, necessary to the best type of medical care. Physicians have never had definite hours of work; they have always been subject to call at any moment for the benefit of their patients. The rights of the sick man are above hours of work or regulations of this character. It is hoped

that every physician will enter wholly into the spirit of the National Recovery Act as an ideal, representing the Government's point of view as to the principles and motives behind which the entire nation must unite if it is to pull itself out of the slough into which it has fallen.

In considering the present activities of the Government under the National Industrial Recovery Act, it must be borne in mind that they will admittedly lead to increased prices, even if that is not their avowed purpose. In trades and industries, it may be economically sound to increase prices. It can hardly be regarded economically sound, however, to increase the cost of medical and hospital services to those who are sick and injured and to women during confinement, and thus to add to their burdens. Undoubtedly this aspect of the matter will be taken into consideration by the National Recovery Administration in its endeavors to apply the act to the medical profession and to related activities. The American Medical Association, however, will keep in touch with jeopardized by any decision affecting adversely the situation, to see that the public health is not interests of those in need of medical services.

Again, *The Journal* would urge physicians in all their relationships to enter fully into the spirit of the legislation, recognizing its experimental character but realizing that the times demand experimentation by the trial and error method if a solution is to be found for what has seemed in the past a most difficult problem.

Members who may not have access to the *Journal of the American Medical Association* and those who are still in doubt concerning any phase of the NRA as it affects them may write the office of the State Association for further data.

PREVENTING CLINIC ABUSE

The medical care of the indigent poor has always been a problem to the medical profession although until recent years it was a question which every physician adjusted according to his knowledge of the patient's ability to pay. In those days the physician was quite familiar with the financial and social status of persons who asked for charity service during an illness and the physician could and did decide whether the person was worthy of free medical attention. Nowadays the problem is not so simple. With the growth of the free clinic in privately owned hospitals and medical schools, the "foundations," "institutes," etc., organized, directed and financed by misguided philanthropists, the extension of numerous municipal clinics designed to care for known indigents by ordinary methods of practice into many fields of specialized service, the problem has ceased to be individualistic but now involves the profession *en masse*. If these bids for the patronage of the sick poor were limited to the known indigent who might be worthy of the charity perhaps the profession could view them with tolerance; but it is no-

torious that few if any of these organizations do so limit their ministrations.

All sorts of remedies for this unhappy situation have been proposed but none seems to have been effective. A new plan was recently approved by the St. Louis County Medical Society and submitted to the county court and the St. Louis County Hospital. The plan has been approved by the county court and by Dr. W. G. Patton, superintendent of the hospital. The St. Louis County Medical Society's problem is centralized to some extent in the St. Louis County Hospital.

On August 9 at a special meeting of the St. Louis County Medical Society the committee on medical economics reported on a plan to minimize clinic abuse in St. Louis County. The meeting was held at the home of Dr. John O'Connell, Overland, chairman of the committee, and was largely attended. Representatives of St. Louis County welfare organizations, the St. Louis Medical Society and the Missouri State Medical Association, the county health commissioner and the prosecuting attorney of St. Louis County were present.

The plan is termed the "certification of the indigent." No free cases will be accepted by the hospital, except acute and emergency cases, without being referred by a physician. Each physician in the county is furnished with blanks for the patient to fill in and sign. Aside from identification of the patient the blanks require him to give full particulars as to his financial condition, the questions being so formed as to make clear the conditions which make it impossible for the patient to pay although not destitute. The patient makes affidavit to these statements and thus becomes liable to six months' imprisonment or five hundred dollars fine if he makes a false affidavit. Mr. Arthur Anderson, prosecuting attorney of St. Louis County, said he would heartily cooperate in the enforcement of this legal phase.

At a dinner given to Dr. W. G. Patton, superintendent of the hospital, July 15, Dr. Patton outlined some of the difficulties encountered and the manner of handling them. Dr. Patton said:

There seems to be a misunderstanding as to just why the St. Louis County Hospital was built and who should receive free treatment at this institution. There is an impression among some people of St. Louis County that if they pay taxes they are entitled to free treatment at the hospital. This impression is wrong as the hospital was built by the taxpayers of St. Louis County to provide medical and surgical care for the indigent poor. We have thirty private beds for the taxpayers and the general public who are able to pay for the service of a private physician and the hospital fee.

The medical profession and charity hospitals as well as private hospitals are facing unusual conditions

at the present time due to this peculiar depression. Hitherto, when we met with depressions if we had a bond or property we could borrow a reasonable amount of money to tide us over until we recovered from the depression. At the present time if a man owns a home it is difficult and often practically impossible to borrow enough money to take care of his immediate medical and surgical needs. Consequently, when people who own a home are seen at a free clinic for treatment or hospitalization it creates the false impression that those persons are abusing the free clinic. You can readily see that a wrong conclusion is drawn by the physician as well as the laity for, as a matter of fact, these people are themselves much embarrassed because they find it necessary to appeal for charity service. They must be taken care of and it is impossible for the management of free hospitals to refuse them medical care.

We have a splendid investigator who investigates all cases that apply for hospitalization and I feel that we have been reasonably successful in preventing any unusual abuse at this hospital.

On July 10 we inaugurated a policy at the hospital requiring patients who apply for treatment at the clinic or for hospitalization to secure a letter from an active practicing physician stating that they are deserving charity patients and are not able to pay a physician or a hospital for medical care.

NEWS NOTES

At the recent examination and meeting of the American Board of Obstetrics and Gynecology in Milwaukee, June 13, the board approved for certification Drs. Theodore H. Aschman, J. Milton Singleton and Ralph R. Wilson, Kansas City.

Dr. August A. Werner, St. Louis, was the guest of the Madison County (Illinois) Medical Society at Highland, Illinois, September 1 and delivered an address on "The Symptoms Which Accompany Castration, Ovarian Hypofunction and Menopause."

The St. Louis County Court appointed Dr. W. G. Patton, St. Louis, superintendent of the St. Louis County Hospital on August 3 to serve until December 31, 1934. Dr. Patton has served as superintendent since March 1, 1933, but at that time no definite term of office had been established, the court reserving the right to remove him at its pleasure.

Dr. C. C. Pflaum, Columbia, assistant professor of pathology, University of Missouri School of Medicine, is serving by invitation as visiting assistant professor of pathology at the University of Tennessee School of Medicine, Memphis, and acting as assistant pathologist to the Memphis City General Hospital during the summer quarter of the current school year.

Dr. Neil S. Moore, St. Louis, was the guest of the Macoupin (Illinois) County Medical Society at Carlinville on July 25 and spoke on "Transurethral Correction of Bladder Neck Obstructions," illustrated with motion pictures.

The cost of rabies control in St. Louis was cut from \$2452 in April to \$513 in July. Dr. Downey L. Harris, St. Louis, authority on rabies who was appointed on July 11 to take charge of rabies control in the city, attributes the decrease in cost to the elimination of stray dogs since every person bitten by a dog that could not be caught and held for observation was compelled to take preventive treatment. An intensive drive by the Humane Society and the city reduced the number of persons bitten by stray dogs from 83 in May and 49 in June to 37 in July.

Dr. Richard L. Sutton, Kansas City, was the guest of the Southwest Texas Medical Society at Corpus Christi, July 12. He spoke on "The Diagnosis and Treatment of Cutaneous Eruptions Due to Drugs" and also gave an illustrated lecture on "The Diagnosis and Treatment of Cancer of the Skin." On July 15 Dr. Sutton was the guest of the Bexar County Medical Society at a specially called meeting in San Antonio. Following a banquet at the Country Club Dr. Sutton entertained the members and their families and friends at the Express Auditorium with an illustrated lecture on his recent expedition to the Arctic.

Washington and St. Louis university medical schools now supply all medical attention required by those helped by the St. Louis Children's Aid Society. The schools had been rendering some help but have taken over all the work and the staff physician of the society has been eliminated. St. Louis University cares for those helped by the Citizens' Relief Unit of the Aid Society, provides dental care and has instituted a new service of medical and psychological treatment for unmarried mothers. Washington University School of Medicine conducts health examinations of children before they are placed in foster homes and medical care afterward.

The Mississippi Valley Conference on Tuberculosis and the Mississippi Valley Sanatorium Association will meet concurrently October 5, 6 and 7 in Kansas City with headquarters at the Muehlebach Hotel. Forty physicians from thirteen states will appear on the program which will include sessions on tuberculosis control, college hygiene, publicity, ad-

ministration and Christmas Seal sales. Among Missouri physicians who will appear on the program are Drs. H. I. Spector and Evarts A. Graham, St. Louis; Dr. George D. Kettelkamp, Koch; Dr. Dan G. Stine, Columbia; Dr. E. E. Glenn, Mount Vernon; Dr. Jesse E. Douglass, Webb City, and Drs. Sam Snider, George H. Hoxie and Herbert Mantz, Kansas City.

A resolution commending the work of Dr. Max Starkloff, for thirty-two years Health Commissioner of St. Louis, was adopted by the Advisory Committee on Medical Affairs to Mayor Dickmann and presented to Dr. Starkloff July 25. The resolution, which was proposed by Drs. Louis C. Boisliniere and Elsworth Smith, read in part: "We hereby desire to record the faithful and efficient service of Dr. Max Starkloff during his administration as Health Commissioner of St. Louis covering a period well over a quarter century, and which tenure in office has made our city such a healthful place of abode." He was further commended "for his untiring efforts to put into effect every advance medicine has made." Dr. Starkloff is serving his second term as president of the International Society of Medical Health Officers.

The International Assembly of the Interstate Post Graduate Medical Association of North America will be held at Cleveland October 16 to 20 in the Public Auditorium. Many distinguished guests including physicians from the United States, Canada and abroad will address the assembly or conduct clinics. The morning sessions will be devoted to diagnostic clinics and scientific addresses will be delivered at afternoon and evening sessions. An informal dinner on October 20 will conclude the session. On the day following the session, post-assembly clinics will be held in various Cleveland hospitals.

Dr. Otto H. Schwarz, St. Louis, will address the convention on "Chronic Subinvolution; Its Pathology, Treatment and Prevention," and will conduct a diagnostic clinic on "Metabolism in Pregnancy." Dr. W. McKim Marriott, St. Louis, will deliver an address on "Special Points in the Feeding of Children With Special Relation to Dentition and Growth," and will conduct a diagnostic clinic on "Nephritis in Children." Dr. Elsworth S. Smith, St. Louis, will present an address on "The Prognosis and Treatment of the Anginal Syndrome."

The twelfth annual scientific session of the American Congress of Physical Therapy will convene in Chicago, September 11 to 16. All

sessions with the exception of hospital clinics will be held in the Palmer House. Twelve members of the Missouri State Medical Association are scheduled to appear on the program. Those who will deliver addresses and their subjects are: Dr. W. W. Duke, Kansas City, "Physical Allergy; Pathology and Treatment"; Dr. John R. Caulk, St. Louis, "The Punch Operation and Its Development," and "Transurethral Surgery, Its Indications and Limitations"; Dr. G. D. Kettelkamp, Koch, "The Use of the Roentgen Ray in Diagnosis and in Evaluating Therapeutic Measures in Pulmonary Tuberculosis"; Dr. Theodore P. Brookes, St. Louis, "The Role of Physical Therapy in the Reduction of Dislocations of the Cervical Spine," and Dr. Horace W. Soper, St. Louis, "Clinical Indications for the Use of the Enema and Colonic Lavage." Those taking part in discussions are Drs. J. J. Singer, Sherwood Moore, M. A. Roblee, V. R. Deakin, H. R. Hildreth, F. H. Ewerhardt and P. C. Schnoebelen, St. Louis.

The eleventh annual fall clinical conference of the Kansas City Southwest Clinical Society will be held in Kansas City, Missouri, October 3, 4 and 5. Following registration at the President Hotel, the first morning will be devoted to clinics at the eleven allied hospitals of Greater Kansas City conducted by the staff members of the hospitals. A special clinic on rectal diseases will be presented at the Kansas City General Hospital with Dr. Jerome M. Lynch, New York City, participating.

The scientific sessions will open in the afternoon of the first day, Tuesday, and will continue through the meeting with programs both Tuesday and Wednesday evenings. Alumni dinners on Thursday evening will conclude the session. Ten distinguished guests from distant cities have accepted invitations to lecture before the session and several guests from nearby cities will participate.

On October 2, just preceding the meeting of the Kansas City Southwest Clinical Society, the Frisco Railway Surgical Association will hold its annual session. On October 6 the Missouri-Kansas Neuro-Psychiatric Society, the Mississippi Valley Conference on Tuberculosis and the Mississippi Valley Sanatorium Association will convene.

Committee chairmen for the Kansas City Southwest Clinical Society are Drs. J. V. Bell, allied hospitals; Logan Clendening, distinguished guests; Hermon Major, entertainment; C. L. Gilles, hall; Druery R. Thorn, registration; A. W. McAlester, 3rd, round table luncheons, R. G. Helman, transportation.

OBITUARY

CHARLES U. DAVIS, M.D.

Dr. Charles U. Davis, Fredericktown, a graduate of Washington University School of Medicine, 1898, died at his home of heart disease, May 4, aged 62 years.

Dr. Davis was born at Patterson, Mo., and obtained his preliminary education in the schools in his community. After receiving his medical degree he began his practice in Wayne County but after a few years went to Fredericktown where he carried on his work until the day of his death.

He was active in organized medicine. He was censor of the St. Francois-Iron-Madison County Medical Society in 1920, vice president in 1923 and president in 1925 and 1926 and alternate delegate in 1924.

In the obituary read at his funeral he was well described:

Always public spirited, he cast the weight of his influence for every civic improvement. On public questions he fearlessly stated his position without reckoning the effect on him personally. Courageous, honest, industrious, charitable, these are the adjectives that must always preface the name of Dr. Charles U. Davis.

He is survived by his widow, Mrs. Hattie Davis, and four daughters.

WILLIAM B. SISSON, M.D.

Dr. William B. Sisson, Kahoka, a graduate of Washington University School of Medicine, 1890, died June 24 after an illness of several months. He was 73 years old.

Dr. Sisson was born in Kahoka and attended the public schools and Monticello Seminary there. He taught school for several years before beginning his medical studies. He began his medical practice in Kahoka in 1890 and continued in practice there until his death except for a short period when he was in the service of the Red Cross in Siberia during the World War and for several postgraduate courses.

Dr. Sisson was a conscientious practitioner performing his duties and sacrificing his own conveniences for the benefit of his patients. He was a loyal member of organized medicine. He served as president of the former Northeast Missouri Medical Association and was delegate to the State Association in 1925 and 1927.

He was a loyal citizen as well as medical practitioner. He served two terms as a member of the board of education, was mayor of Kahoka from 1916 to 1920 and was president of the Kahoka Commercial Club for a number of

years. In the death of Dr. Sisson the community has lost one of its outstanding citizens.

He is survived by his widow, Mrs. Alice Sisson, two sons, two daughters and five grandchildren.

DAVID HICKMAN YOUNG, M.D.

Dr. David H. Young, Fulton, a graduate of Washington University School of Medicine, 1878, died of complications following influenza, March 22, aged 76.

Dr. Young was born in Columbia, Missouri. His father, Dr. Archibald Young, went to Fulton from Kentucky in 1849, moving to Columbia seven years later.

Dr. Young was educated at Kemper Military School, Boonville, later graduating from the medical department of Missouri University and then attended the Missouri Medical College, now Washington University School of Medicine, St. Louis. Two years later he completed a medical course at Bellevue Medical College, New York.

He began his medical practice in Columbia, Missouri, and a few years later, in 1883, went to Fulton as a physician at the State Hospital, remaining with the institution for several years. In 1887, he was appointed a member of the board of managers of the Fulton State Hospital and during his membership on the board served four years as its president. He left the State Hospital and for a number of years was in private practice in Fulton. In 1920 he returned to the State Hospital as a staff physician and served several years as assistant superintendent. On December 11, 1929, he was appointed superintendent by the institution board and held this office until his death.

Dr. Young was a loyal member of the Callaway County Medical Society holding above it in his interest only the institution with which he was connected for so many years.

He was a man who stood high in the estimation of his many friends in Fulton and that part of the state. He was regarded as an authority on mental diseases. He loved the work in connection with the Fulton institution and throughout the time that he was connected with the hospital made it a point to keep in personal contact with the patients. He will be sadly missed at the institution in Fulton and by many friends and colleagues throughout the state.

He is survived by his widow, Mrs. Mary Young, a daughter, Mrs. Robert Foley, three grandchildren and a sister.

SOCIETY PROCEEDINGS

COUNTY SOCIETY HONOR ROLL FOR 1933

(UNDER THIS HEAD WE LIST SOCIETIES WHICH
HAVE PAID DUES FOR ALL THEIR MEMBERS)

HONOR ROLL

Mercer County Medical Society, December 10, 1932.

Moniteau County Medical Society, January 13, 1933.

Ste. Genevieve County Medical Society, January 19, 1933.

Camden County Medical Society, January 20, 1933.

Dent County Medical Society, February 1, 1933.

Chariton County Medical Society, February 10, 1933.

Webster County Medical Society, July 8, 1933.

CAPE GIRARDEAU COUNTY MEDICAL SOCIETY

The Cape Girardeau County Medical Society met in Jackson at 8:30 p. m. July 10, with Dr. M. H. Shelby, Cape Girardeau, president, in the chair.

Members present were: Drs. J. H. Cochran, Sylvester Doggett, O. L. Seabaugh, H. L. Cunningham, H. V. Ashley, E. H. G. Wilson, Asa Barnes, C. A. W. Zimmermann, of Cape Girardeau, and Drs. D. I. L. Seabaugh, D. G. Seibert, and B. W. Hays, of Jackson. Guests were Drs. S. S. Barnes, R. A. Ritter and Wm. Godfroy.

Dr. Sylvester Doggett, Cape Girardeau, brought a message from the Scott County Medical Society suggesting that a three county group be formed including Scott, Perry and Cape Girardeau counties and considering inviting Mississippi County. After some discussion Dr. Wilson moved that a committee be appointed to investigate the question. Dr. Cunningham seconded the motion and it carried. Dr. Shelby deferred appointing the committee.

Dr. H. L. Cunningham, Cape Girardeau, presented three patients all suffering from an interstitial keratitis, each from a different cause. The first case was due to avitaminosis and was improving under proper dietetic regimen. The second was traumatic in nature, involved only one eye and was improving. The third was a bilateral case and even though there was a 4 plus Kahn reaction, Dr. Cunningham did not consider it syphilitic in nature but saw in it the characteristics of a keratitis profunda, a rare disease the etiology of which is not known.

Dr. Doggett presented a paper on "Contract Practice, Its Evils," attacking the plan of contract practice and delivered thrusts at members holding contracts. In the opinion of Dr. Doggett the medical profession was mercenary and was stripping itself of its dignity.

After considerable discussion in which it was generally agreed that some of Dr. Doggett's points were well taken, Dr. Doggett, in closing annihilated all the

good in his paper by declaring that if a contract were offered him he would take it.

Meeting of August 14

In the absence of Dr. M. H. Shelby, Dr. Sylvester Doggett, Cape Girardeau, vice president, presided. Members present were: Drs. Sylvester Doggett, E. H. G. Wilson, John St. Avit, Jr., J. J. Drace, and C. A. W. Zimmermann, of Cape Girardeau, and Drs. D. G. Seibert, and B. W. Hays, of Jackson. Dr. R. A. Ritter, a guest, was present.

Dr. R. A. Ritter presented his card of transfer from the St. Louis Medical Society. Dr. Doggett appointed Dr. Wilson as teller and a unanimous vote was recorded to receive Dr. Ritter into our Society. Dr. Ritter expressed his pleasure and his intention to cooperate.

A question was presented by Dr. Zimmermann pertaining to the abandoning of evening office hours. After some discussion a compromise was reached and a vote to discontinue evening office hours on Tuesdays and Thursdays carried.

Dr. Wilson read a paper on "Essential Hypertension." The paper contained many quotations and dwelt extensively on the use of viscum album as an agent of therapeutic value.

Dr. Hays opened the discussion in which Drs. Ritter, Seibert and Zimmermann took part.

Dr. Ashley, the second essayist on the program, was absent.

C. A. W. ZIMMERMANN, M.D., Secretary.

FIVE COUNTY MEDICAL SOCIETY GROUP

The nineteenth quarterly meeting of the Five County Medical Group, held at Hayti, June 1, was up to the usual high standard in interest and instructiveness. Thirty-six doctors enjoyed the hospitality of the Pemiscot County Medical Society and all did full justice to the delightful dinner served by the ladies of Hayti. Dr. J. W. Johnson, Hayti, president of the Pemiscot County Medical Society, was chairman of the meeting.

Mr. E. H. Bartelsmeyer, St. Louis, assistant secretary of the Missouri State Medical Association, brought greetings from Dr. Goodwin and discussed briefly some of the problems confronting organized medicine and gave assurance that the State Association is ready to serve the county societies in every possible way.

Dr. G. A. Sample, Chaffee, was present and by request discussed the proposition of his county becoming actively associated with the Group. After a brief general discussion a vote was cast in favor of inviting Scott County Medical Society to come into the Group. Enlarging the Group still more by inviting Cape Girardeau and Mississippi counties to join was discussed. The only argument against the larger group is the distance required to attend some of the meetings would be too great for convenience.

It has been the desire of the members of the Group that the meetings should be held at the end of the day so that only an evening would be given up for the meeting and the return home.

The first number of the scientific program was a lecture illustrated by lantern slides on the "Classification of Anemia" by Dr. Conley H. Sanford, Memphis, Tennessee. In his introductory remarks Dr. Sanford commented on the symptoms and called attention to the many etiologic factors. Without detracting from the importance of liver extract he expressed the opinion that the very importance of the remedy is being made the basis by many pharmaceu-

tical houses for exploiting products of liver extracts of questionable value.

The classification under which the subject was presented was: (1) Microcytic anemia in which the corpuscles are on the average large and well filled with hemoglobin. This includes pernicious anemia and sprue and the pernicious anemia of pregnancy. (2) Normocytic anemia in which although the total number of cells is reduced there is no marked alteration in their average size and hemoglobin content; this class includes anemia resulting from acute blood loss, aplastic and semi-aplastic anemias. (3) Simple microcytic anemias in which the corpuscles are smaller than normal and contain less hemoglobin than is normal. The simple chronic anemia associated with various chronic infections and intoxications falls into this group. (4) Hypochromatic microcytic anemias in which the reduction in hemoglobin content is even more marked than the reduction in size with the result that the corpuscular hemoglobin concentration is reduced. In this group the anemia associated with chronic blood loss is found.

The lecturer emphasized the importance of a correct diagnosis of the type of anemia because, he pointed out, it is the clue to correct treatment. He called attention to the uselessness of liver extract for anemia of the normocytic and hypochromatic types.

Since anemias have such varied causes it cannot fail to be of great importance to every general practitioner to learn when to use iron, diet, sunshine and fresh air as well as when to use liver extract. The dosage of iron should be much greater than is customarily used.

The second lecture was by Dr. Casa Collier, Memphis, Tennessee, in which he showed a moving picture he had made on a recent trip to Africa. This travel picture was an unusual and fascinating entertainment. It showed elephants, hippopotami and other African game killed by the doctor. It pictured the natives in their natural habitat, in villages, at work and at play, on the trails and on the rivers in their various modes of dress and undress.

This moving picture with the explanatory lecture describing the customs of the people, the hardships endured in crossing the dry grass country and the thrill of killing big game was altogether a moving story with thrills for the audience. But with all the unusualness of this part of the picture the lecturer brought a message of even greater interest to the doctors when he pictured the leper colony and many cases of encephalitis (sleeping sickness) and elephantiasis. A moving picture of Dr. Collier operating on a case of elephantiasis of huge proportions, involving the scrotum of a native, was a fine demonstration in medical instruction of the unusual.

The next meeting of the Group will be in New Madrid County early in September.

PAUL BALDWIN, M.D., Secretary.

RANDOLPH-MONROE COUNTY MEDICAL SOCIETY

The Randolph-Monroe County Medical Society met May 9 at 8 o'clock at the home of Dr. C. H. Dixon, Moberly. The president, Dr. P. C. Davis, Moberly, called the meeting to order.

Our delegate, Dr. C. H. Dixon, Moberly, gave a detailed account of the meeting at Kansas City, as also did our Councilor, Dr. D. A. Barnhart, Huntsville. Unfortunately, only three members of our society attended the State Meeting.

Dr. R. D. Streeter, Moberly, gave an interesting

and instructive talk on the "Aschheim-Zondek Diagnosis of Pregnancy." All enjoyed the talk; a general discussion followed after which we were invited to the dining room where an excellent meal was served.

Members present were: Drs. M. C. McMurry and J. F. Flynt, of Paris; Drs. D. A. Barnhart and R. G. Epperly, of Huntsville; Dr. R. A. Woods, Clark; Dr. J. P. Allen, Cairo, and Drs. P. C. Davis, R. D. Streeter, O. K. Megee, C. H. Dixon, C. C. Smith, M. E. Kaiser, F. L. McCormick, Jesse Maddox, T. S. Fleming, and L. E. Huber, of Moberly.

Dr. G. I. Allen of the Wabash Employees' Hospital, Moberly, was a visitor.

Meeting of June 13

The Society met June 13, at the McMurry Hospital, Paris. The meeting was called to order by the president, Dr. P. C. Davis, Moberly.

No regular program was arranged but there was a general discussion of various things that come up in the profession, after which we were invited to the dining room where Mrs. McMurry served a most excellent meal.

Members present were: Drs. P. C. Davis, Jesse Maddox, C. H. Dixon, R. D. Streeter, T. S. Fleming, M. E. Leusley, L. E. Huber, and F. L. McCormick, of Moberly; Drs. D. A. Barnhart and R. G. Epperly, of Huntsville; Drs. M. C. McMurry, J. F. Flynt, and G. M. Ragsdale, of Paris, and Dr. C. F. Burkhalter, Higbee.

Visitors present were: Dr. Wm. E. Johnson, Madison; Dr. H. B. Hunter, dentist, Paris; Dr. John Maddox, Moberly, and Dr. Willard Barnhart, Huntsville.

Meeting of July 11

Members of the Society and their families met with and were entertained July 11 by the auxiliary with a picnic dinner at the home of Dr. D. A. Barnhart, Huntsville. At 7 o'clock a full meal was served on the lawn in cafeteria style.

Dr. Barnhart read an excellent paper on the different phases of "Obstetrics" as he found it in something near 2500 cases. This was a practical paper and was freely discussed.

We had the pleasure of having with us two of the older physicians of our county. One, Dr. J. D. Hammett, Huntsville, who is now nearly 86 years of age, was one of the charter members of our County Society. Because of ill health, he retired from practice in early life.

The other, Dr. J. W. Taylor, Huntsville, is 79 years of age and has been retired from practice for a number of years, also being a former member of the Society. They were unanimously voted into our Society as honorary members. We are glad to have these two new members with us.

Those present were Dr. and Mrs. T. S. Fleming and Shirley, Dr. and Mrs. Jesse Maddox, Dr. and Mrs. P. C. Davis, Dr. and Mrs. C. H. Dixon, Dr. and Mrs. L. E. Huber and K. Herbert, Dr. and Mrs. O. K. Megee, and Molly and Margaret, Dr. M. E. Leusley, Miss Ruth Leusley, Dr. and Mrs. F. L. McCormick, of Moberly; Dr. and Mrs. M. C. McMurry, Paris; Dr. and Mrs. R. A. Wood, Clark; Dr. and Mrs. R. G. Epperly, Dr. and Mrs. Marvin Epperly, Dr. and Mrs. D. A. Barnhart, Dr. J. W. Taylor, Dr. J. D. Hammett, Mrs. O. F. Hatton, Mrs. W. P. Terrill, Dr. R. E. Kiernan, and Mrs. P. L. Vasse, of Huntsville; Misses Elizabeth and Frances Terril, Phoenix, Arizona, and Mrs. Vicci Auduchon, Santa Ana, California.

F. L. McCORMICK, M.D., Secretary.

WOMAN'S AUXILIARY

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

12th Annual Meeting, Cleveland, 1934

President, Mrs. James Blake, Hopkins, Minnesota.

President-Elect, Mrs. Robert W. Tomlinson, Wilmington, Delaware.

WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION

Tenth Annual Meeting, St. Joseph, 1934

President, Mrs. Hudson Talbott, St. Louis.

President-Elect, Mrs. Wm. H. Goodson, Liberty.

Advisory Council, Dr. J. F. Harrison, Mexico.

A MESSAGE FROM THE STATE PRESIDENT

The end of our vacation is in sight and we who have the responsibilities of leadership are laying our plans for a year which we hope will go down in our auxiliary annals as happy and healthful.

"Code" is the word of the hour and as a code for our year's work I can do no better than quote from a recent letter from our national president, Mrs. James Blake, to her board members:

The county or its equivalent, a district, parish or a council is the unit for our work. Service to the men in our individual county units is our keynote. The advisory board from the county medical society is our helpmate in every way. Sane planning of programs and expenditures of money are the duty of every county president and her executive board with the thought in the background of the county picture, that each county find and stress one thing if possible. Always remember that we aim never to tear down but to back every worthwhile and authentic health project or agency in a county and always remember that every group must lead or be led. So be the leaders, always under the advice of your advisory council in every community project.

In this excerpt from Mrs. Blake's letter there are two suggestions that, to my mind, every county auxiliary would do well to adopt as a permanent policy: First, "service to the men in our individual county units"; second, "each county find and stress one thing if possible." The "one thing" may be a piece of philanthropic, social or educational work but concentration on some especial objective brings more satisfactory results than a scattering of the forces over too varied a field.

In addition to the one thing that is the especial interest of each county unit, we are hoping for the support of every county in the three outstanding state objectives: (1) The Essay Contest which is under the direction of Mrs. William Goodson, our president-elect. The subject is "Responsibility of Government, National, State and Local, for the Promotion of Health." The state board urges the county auxiliaries to plan a course of study for the women on this subject. It is only consistent as sponsors of this contest that we possess some knowledge of the subject ourselves. (2) That we hold our record in *Hygeia* work. Missouri has for several years been the banner state in *Hygeia* circulation. Let's take for our slogan in this field, "They shall not pass." Our Public Relations work is worthy of the best of our tact and ability. We have no greater opportunity for service to our profession and our community than that offered by our "Public Relations Day."

By all means there should be a chairman of these three auxiliary projects in each county unit and I beg your earnest cooperation with our state chairmen

of these three projects from whom you will doubtless hear at an early date.

It sounds like a full program but there is yet room for the social pleasures and the friendly contacts which form one of the fundamental purposes of our existence as an organization.

Before closing, I would stress again Mrs. Blake's keynote, "Service to the men in our individual county units."

Let me assure you again of my deep appreciation of your expressions of confidence and cooperation and of my earnest desire to be of real service to you.

MRS. HUDSON TALBOTT, President.

NEWS NOTES

The successful administration of Mrs. A. G. Wichman as president of the St. Louis Auxiliary closed June 9 with the installation of Mrs. Walter C. G. Kirchner as president, and her supporting officers. The installation was followed by an annual luncheon given by Mrs. Wichman and her board.

Following the luncheon a musical program was given including a number on the new and yet rare instrument, the theremin, by Mrs. A. M. Aszmann of the Auxiliary to the East St. Louis Medical Society.

A beautiful clock was presented to the auxiliary by Mrs. George N. Seidlitz in memory of a beloved sister.

The June meeting of the Johnson County Medical Society and Auxiliary was a thoroughly enjoyable picnic in Memorial Park at Warrensburg. Guests were the Lafayette County Medical Society and Auxiliary and Dr. and Mrs. M. P. Overholser, Dr. and Mrs. David S. Long, Harrisonville, and Dr. and Mrs. Frank Hare, Lexington, Kentucky.

At the July meeting of the Lafayette County Auxiliary, Mrs. J. W. Lightner, a pioneer doctor's wife who has ever carried "a lantern in her hand" was elected president-elect.

The Lafayette Auxiliary is nationally recognized as the first to appoint a chairman to assemble the A. M. A. Bulletins and report on the auxiliary department therein. May every other Missouri auxiliary follow suit.

The Buchanan County Auxiliary entertained the County Medical Society at a garden party picnic at the home of Dr. and Mrs. Floyd H. Spencer the evening of June 30. Reports of the Milwaukee meeting were given following the supper.

Mrs. W. T. Martin, Albany, is public welfare chairman of the Missouri Federation of Women's Clubs and Mrs. O. O. Ash, Moberly, is division chairman of social and mental hygiene.

BOOK REVIEWS

ELECTROSURGERY. By Howard A. Kelly, M.D., LL.D., F.A.C.S., Baltimore, Maryland, and Grant E. Ward, M.D., F.A.C.S., Baltimore, Maryland. With 382 illustrations by William P. Didusch and others. Philadelphia and London: W. B. Saunders Company. 1932. Price \$7.00.

The timeliness of the subject alone makes this an important book. It discusses both in principle and in detail a new technical adjunct to surgery and sets

out and demonstrates an extension of the power of thermal surgery in a very convincing way.

Thermal surgery is not new but its undoubted advantages in cancer were appreciated and used by relatively few, perhaps because of certain difficulties of application and the lack of proper machinery. This lack has now been largely supplied and many new fields are open for its use.

As the author wisely says, "Progress will be so rapid in the new fields now open that there will be much more to say before the print is cold. Many new things will be learned and will be hurrying for reports." This clear text and the full illustrations of cases and results point the way in an illuminating fashion.

E. D. T.

ERDMANN'S CLINICS. Excerpts Selected from the Clinics of John F. Erdman, M.D., F.A.C.S., Professor of Surgery in Columbia University; Executive Officer in the Department of Surgery, etc. Edited by J. William Hinton, M.D., F.A.C.S., Associate Professor of Surgery, New York Postgraduate Medical School (Columbia University); Associate Visiting Surgeon to Bellevue Hospital, New York City. Illustrated. Philadelphia: W. B. Saunders Company. 1932. Price \$4.50.

Erdmann's Clinics is presented in a style similar to the Surgical Clinics of North America. One with Erdmann's many years in active practice and such a tremendous array of material is able to present cases of extreme importance. In the attempt to give only the cardinal points, some of the cases have been presented almost too briefly. It makes interesting reading, particularly for the short moments of spare time.

J. G. P.

CHILDREN'S TONSILS IN OR OUT. A Critical Study of the End Results of Tonsillectomy. By Albert D. Kaiser, M.D., Associate Professor of Pediatrics, University of Rochester Medical School; Chief Pediatrician, Rochester General Hospital; Pediatrician, Rochester Dental Dispensary. Illustrated. Philadelphia: J. B. Lippincott Company. Price \$5.00.

Kaiser's conduct of the survey of many children of Rochester, New York, who received a tonsil operation, as well as those who did not, is well-known to the general profession. This survey has occupied a period of ten years, has been properly financed by a Research fund and has had the advice of other well-known authorities, chiefly in the University of Rochester Medical School. The school children were followed up through cooperation with the school authorities, as regards malnutrition, the relation between tuberculosis and tonsils, etc. Doctors Clausen, Bayne-Jones, Birkhaug and many other men of both local and national reputation assisted in the preparation of the book. So far as I know, the basis for this work is the only sustained effort in this country towards evaluation of the tonsil relationship to the child's well-being. In England a commission has existed for such a purpose.

The title of the book is well chosen and one knows immediately that this will give information that he is seeking. Dr. Birkhaug has written the excellent chapter on bacteriology of healthy and diseased tonsils.

It is interesting to note that about 35 per cent of children are subject to repeated tonsillitis or sore throat, and that the common age period for such is from 4 to 7 years. Removal of diseased tonsils and adenoids has usually a relation to subsequent lessened

incidence of common colds, but the author states that with healthy tonsils and adenoids their removal may even be followed by increased susceptibility to colds.

Chapters on the relationship to cervical adenitis, ear infections, sinusitis, the communicable diseases, especially scarlatina and diphtheria, are of interest, but the most important is the consideration of rheumatism, chorea, heart disease, tuberculosis, malnutrition and asthma.

A short review cannot take up the conclusions reached in this volume, entirely devoted to the question as to whether it is better for tonsils to be out. The reader will find the book of value in helping him know more about a subject which is difficult even for physicians to learn; there are so many variables, it takes so many cases and so many years of follow-up observations to bring one to a knowledge which makes one speak with real authority.

I have known Dr. Kaiser during his work on this subject, have discussed it privately and publicly with him, and I believe he has made a conservative and definite contribution by publishing this volume. It represents a real effort to know the truth. F. C. N.

TREATMENT IN GENERAL PRACTICE. By Harry Beckman, M.D., Professor of Pharmacology at Marquette University, Milwaukee, Wis. Philadelphia and London: W. B. Saunders Company. 1931. Price \$10.00.

This well named book gives the general practitioner methods of treatment—the kind of treatment that the man in general practice is required to administer. The book is full of practical ideas and suggestions, therapeutic measures that may meet the requirements of any case. In addition to the numerous prescriptions presented fully, there are also complete diet lists, practically arranged to be used in conjunction with therapeutic measures.

M. J. G.

RADIOLOGIC MAXIMS. By Harold Swanberg, B.Sc., M.D., F.A.C.P., Editor, *The Radiological Review*; Radiologist, Saint Mary's Hospital and Blessing Hospital, Quincy, Illinois, etc. With a foreword by Henry Schmitz, A.M., M.D., LL.D., F.A.C.R., F.A.C.S., Professor of Gynecology and Head of the Department, Loyola University School of Medicine; Past President, American Radium Society, etc.; Quincy, Illinois: Radiological Review Publishing Company. 1932. Price \$1.50.

This little volume is a compilation of maxims suggested by books and articles read by the author, interspersed with short statements on radiologic subjects by prominent medical men who are not radiologists. These maxims are expressions of highly trained men who are not biased in their views.

The purpose of the book is to put into the hands of every physician and especially the general practitioner, the achievements of radiology so that he may be better prepared to render the highest type of service to his patient.

The book is divided into three parts, the first part being maxims and quotations pertaining to general radiology. The second considers the field of roentgen diagnosis, in which there are many terse statements of roentgen signs in various diseases. The third and major portion of the book outlines the indications and limitations of roentgen ray and radium therapy in cancer, dermatology and gynecology.

Based on good radiologic authority this book is recommended to every one who practices medicine.

W. K. M.

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E. J. GOODWIN, M.D., Editor
1023 Missouri Building, St. Louis, Mo.
Telephone, Jefferson 5261.

PUBLICATION } J. C. B. DAVIS, M.D., Chairman
COMMITTEE } G. WILSE ROBINSON, M.D.
M. A. BLISS, M.D.

THE ETIOLOGY, DIAGNOSIS AND TREATMENT OF GOITER

ARNOLD S. JACKSON, M.D.

MADISON, WISCONSIN

I wish to thank Dr. Stowers for his courteous remarks, and also the members of the program committee for the opportunity of appearing here this afternoon. A few months ago it was my pleasure to help entertain some of the members of your Association in Madison and I hope that if any of you are going on vacations to our Wisconsin lakes and woods you will again give me this pleasure. I do not remember ever having a better time or being more royally entertained than here in Kansas City, so do not forget that any time you come to Wisconsin please stop at Madison and let me do something for you.

Obviously it is impossible in a few minutes to discuss thoroughly any one of the phases of disease of the thyroid gland. Moreover, in your own Association there are a number of outstanding men many of whom are well qualified to discuss this subject. I hope they will bear with me if I merely present a general resumé, bringing out the points that I feel will be of some interest and practical value to the majority rather than the specialist, to those interested in medicine and surgery, in gynecology and ophthalmology and the other branches of medicine. Almost daily they encounter cases of goiter or of some other disease of the thyroid gland.

ETIOLOGY

Goiter is found in practically every inhabited country on the face of the earth, from the North to the South Pole. In far-off India there are hundreds of thousands of persons afflicted with goiter and cretinism. In Switzerland it is such a serious economic and social problem that one out of every six recruits for the army is rejected. It is prevalent in France, particularly

in the Alps, in Germany, Russia, New Zealand, China, and in England in certain localities people are said to have Derbyshire necks because goiter is so prevalent. It is found in South America and at the equator as is shown in the picture of an African princess. Here on the North American continent there is a goiter belt extending from Hudson Bay to the Mason and Dixon line, and from Seattle to Boston. Goiter is most prevalent in the Northwest, Washington having the highest incidence, but it is very prevalent in the Middle West, particularly in the Great Lakes region, and Missouri is perhaps on the borderline. As we go through the South we find less goiter in Mississippi and Louisiana and Florida has the least of any state in the Union. Geologists tell us that at one time this continent was entirely covered by the ocean and as the water receded the northern half of the country was the first to emerge



Fig. 1. Large adenomatous goiter in an African. Picture taken in Missionary Hospital near the equator.

Read at the 76th Annual Meeting of the Missouri State Medical Association, Kansas City, May 1-4, 1933.

from the water and the southern half was covered until comparatively recent times. I think anyone who has been in Florida can easily confirm this view. If that is true, we know that the greatest deposits of iodine are found in the ocean and consequently the water in the Southern states should contain a higher percentage of iodine. An analysis of water such as found in Missouri and Wisconsin shows the iodine content of the water to be lower than in the Southern states. In one quart of water in Atlanta we would probably find ten times as much iodine as in the same amount of water in Kansas City, St. Joseph or St. Paul.

It is probably true that deficiency of iodine is an important factor in the cause of goiter. This many claims that have been made in the last theory is nearly a hundred years old in spite of decade or more. In 1811 Courtois discovered iodine in kelp and in 1850 Chatin of France asserted that endemic goiter and cretinism could be averted by iodine.

In spite of a great deal of evidence in favor of the iodine deficiency theory, I believe the majority of men who are interested in goiter have rather swung over to the germ theory. The foremost exponent in the world of this cause of goiter is an officer in the English army who has been stationed in the Himalaya Mountains for many years. Col. McCarrison has experimentally produced goiter in animals and also temporary enlargement of the thyroid gland in some of his soldiers through the use of a filterable virus.

I have had the great pleasure in the last few weeks of reviewing papers submitted for the annual award of the American Goiter Association, papers submitted by scientists from all over the world. One that especially impressed me is by a young investigator in Michigan who by countless experiments during the last two years has overthrown the work of Houda of Washington who claimed to have found the cause of goiter in germs. Crotti of Columbus has been working on the fungus theory for many years but unfortunately he has not yet been able to produce goiter experimentally with this fungus.

A more recent work of interest is that on the effects of cabbage. Two investigators working in the field of syphilis in rabbits were surprised to find that they were able to produce enlargement of the thyroid gland by feeding cabbage. This occurred in the winter and spring months, showing undoubtedly that cabbage yielded a goiter-producing substance. But when they attempted to repeat the experiment during the summer they were unable to produce thyroid enlargement, showing that during this season the

cabbage acquires an antigoiner producing substance. An analysis of human blood made during the summer months shows a higher concentration of iodine than during the winter months. We know if iodine is to be given as a prophylactic it must be administered during the winter months, particularly February and March when the iodine content of the blood is at its lowest level.

PREVENTION

I wish to say one word on the question of prevention because after all I think it is most important to reach the largest number of people. There have been various methods tried to prevent goiter. The City of Rochester has put iodine in the drinking water; Michigan has put iodine in salt and Switzerland gives every child iodine tablets. I cannot see the idea of giving people iodized salt. If you do not have goiter at the age of twenty-one the chances are you will never have one, unless it is the exophthalmic type which may occur at any age. Consequently there is no indication for giving adults any of these substances which contain iodine. I believe that all adenomatous goiters have their inception before the age of maturity and that preventive treatment should be reserved for this period of life.

I have been interested in a group of a thousand children that I have been studying for the last ten years. I hope to follow this group another decade before drawing conclusions, but it has been of interest to observe that in this series not a single case of adenomatous goiter has developed provided the child was put on treatment before the adenomatous goiter was present.

In talking to Dr. Marine some years ago I told him that I was disappointed in the results of iodine therapy in children and he suggested the use of thyroid as well as iodine. You might be interested in the plan we have worked out in trying to provide iodine and thyroid for this group during the school year. Briefly, between the ages of two and ten these children are given 10 milligrams of iodine a week; from ten to fifteen, 20 milligrams; from fifteen to twenty, 30 milligrams. During the first month of the school year children between ten and twenty-one are given one or two grains of desiccated thyroid. This plan is largely adopted in our Wisconsin schools.

DIAGNOSIS

As to the diagnosis of toxic goiter, you are familiar with the fact that there are two schools: Those supporting Crile, Marine, Graham, etc., believe toxic adenoma and exophthalmic goiter are variations of the same disease, while Plum-

mer and his followers believe they are two distinct clinical entities. To me toxic adenomatous and exophthalmic goiter are just as different as scarlet fever and measles. Not only are the clinical signs and symptoms entirely different, but the response to treatment and the method of caring for these patients are entirely different. Moreover, there is a marked gross and microscopic pathological difference.

I might try briefly to summarize the important clinical differences as follows: Exophthalmic goiter is characterized by a series of waves and at the crest of these waves a crisis occurs in which there is fever of perhaps 104° , nausea, vomiting and diarrhea. Such crises are never seen in toxic adenoma. Exophthalmic goiter may be rapid in onset; toxic adenoma has an insidious, slow onset over three or four years. A majority of these cases have had toxic symptoms for perhaps three years before the surgeon sees them. Adenomas develop hyperthyroidism between forty and sixty years of age; exophthalmic goiter is more apt to occur in younger persons the average age being under forty. In a case of exophthalmic goiter there is rapid loss of weight accompanied by a variable and at times ravenous appetite. That is one of the best diagnostic points I know. In no other condition except diabetes mellitus do we have an excessive appetite and loss of weight. When a patient comes for consultation and you ask about her appetite she may say it is poor, that she is nauseated, because she has had the disease for several months and is approaching a crisis. But if you ask her to recall a date two or three months before, say Thanksgiving or Christmas, she may remember that her appetite was very good. You can immediately rule out cancer of the stomach, because such cases do not have a ravenous appetite with loss of weight. Tuberculosis can be ruled out. In fact, tuberculosis and hyperthyroidism are rarely associated. Fever is a characteristic of tuberculosis and is never seen in exophthalmic goiter except during a crisis.

On examination exophthalmos will be found present in 50 per cent of cases within three months of onset of the disease. Those that are hardest to diagnose are the ones that have no exophthalmos and no apparent enlargement of the thyroid gland. By putting the index finger over the superior thyroid artery a thrill may be detected in 75 per cent of the cases. It is like the purring of a cat; the bruit is like the sound of an ocean shell held to your ear. Those are two diagnostic points that frequently appear in exophthalmic goiter and that never appear in toxic adenoma. In the latter condition then crises do not occur, fever is never present, the

appetite is never ravenous, exophthalmos does not occur, thrills and bruits are not present in contrast to exophthalmic goiter.

As to the other signs and symptoms such as tremor, quadriceps loss, tachycardia, insomnia, sweating, etc., they are typical of both conditions. There is another sign that is perhaps most valuable of all. There are cases of exophthalmic goiter that even Dr. Plummer has trouble to diagnose; perhaps also Dr. Hertzler. In such cases when the blood pressure is taken we will find if the person is fifty years of age the typical systolic pressure would be 150 and the diastolic 75, or even 65—a low diastolic pressure and a high pulse pressure. Contrast that with the blood pressure in toxic adenoma where there is always a hypertension. A patient of fifty with a toxic adenoma would have a systolic pressure of 180 and a proportionately high diastolic pressure of 110 or more.

The metabolism test rarely goes over 50 in toxic adenoma, but it is not unusual to see it as high as 70, 80 or higher in exophthalmic goiter.

As regards the response to iodine, approximately 40 per cent of cases of toxic adenoma will respond favorably to iodine. Some will be made worse. In my experience fully 99 per cent of patients with exophthalmic goiter will respond favorably.

The cases that seem to vary and do not follow these rules are the mixed type that are confusing to everyone. When a person has had an adenoma for twenty years and then suddenly develops toxic symptoms, as excessive appetite, rapid loss of weight and extreme nervousness, we are not dealing with toxic adenoma; these are cases of adenoma with exophthalmic goiter superimposed.

TREATMENT

As to treatment: Two years ago I gathered statistics from thirty surgeons interested in goiter and presented a paper at the Western Surgical Association on "Iodine-Fast Exophthalmic Goiter," i. e., cases that have been kept on iodine for longer than four weeks. These thirty surgeons reported eighteen deaths following thyroidectomy that year in persons who had been kept on iodine for a long time. If there is one plea I make before the members here today it is, do not keep your cases of exophthalmic goiter on iodine for a long time because it was shown many years ago, and everyone should realize it by this time, that when these cases are kept on iodine for several weeks the iodine loses its effect. After a preliminary gain in weight and quieting of the toxic symptoms cardiac symptoms begin to appear, the metabolism curve rises and if operation is attempted the pa-



Fig. 2. Exophthalmic goiter. Patient twenty-four years of age. B. M. R. + 58 per cent, 8 lbs. weight loss; excessive appetite; symmetrical enlargement of the gland with thrill and bruit.



Fig. 3. Same patient three months after operation. B. M. R. zero; weight gain 17 lbs. Complete recovery from symptoms.

tient may have a fatal postoperative hyperthyroid crisis. We have had to change from the primary thyroidectomy which we did a few years ago to a two-stage operation in these cases.

The time to operate on a case of exophthalmic goiter is about the tenth day after starting treatment with iodine, providing cardiac decompensation is not present. Start these patients off on as much iodine as you wish. We give them ten drops six times a day. The metabolic rate is taken the first day and then a day or two before operation. They are given a high caloric diet and a half grain of luminal three times a day as a sedative. They are not put to bed and kept there but are allowed up for several hours a day, and they must be able to walk around the hall before they are operated on. The great majority of cases then will be in good condition for operation.

Anesthesia plays a part. Statistics have shown good results with all forms of anesthesia. In our clinic we have used local anesthesia in all save two or three instances, but others have achieved equally good results with general anesthesia. We give our patients ten grains of sodium barbital, one third grain of pantopon,

and grains 1/150 of scopolamin, and then use the method which we think most important, superficial nerve block. Make a wheal of novocain above the clavicle, take a long needle and run it along the posterior border of the sternocleidomastoid muscle and inject the cervical sympathetic plexus as the needle is withdrawn. This method has proved just as effective as the deep cervical nerve block and is much easier and quicker to do.

Toxic adenoma offers the greatest surgical risk, particularly the advanced cases that have developed myocarditis and auricular fibrillation. In those, experience has taught me to go back and do a two-stage operation. There is a difference of opinion as to whether these cases ought to be digitalized. Plummer thinks digitalization is responsible for death in some instances. I do not follow him in that. In fact, I would rather use large doses. In the slides I will try to bring out some of these points.

DISCUSSION

DR. JOHN M. McCAUGHAN, St. Louis: I thought it might be of interest to mention two unusual anomalies which I saw recently while working with Dr. John de J. Pemberton, of Rochester, Minnesota. Both of these conditions are quite rare and of considerable importance to the goiter surgeon.

The first was a congenital absence of one lobe of the thyroid gland. This condition was discovered while operating on a young woman for adenomatous goiter without hyperthyroidism. The left lobe of the gland, in this patient, was entirely absent. I was able to find four other similar cases in the records of the Mayo Clinic and more than twenty others in the literature. The Germans, who have reported most of these cases, speak of the condition as hemi-aplasia of the thyroid gland. The importance of this anomaly lies in the fact that it may pass unrecognized. I feel that it would be well for the goiter surgeon to make sure of the presence of both lobes before beginning his resection.

The other condition was that of an anomalous distribution of the recurrent laryngeal nerve. The case I saw was in a young woman upon whom we were operating for adenomatous goiter with hyperthyroidism. The right recurrent laryngeal nerve in this patient came directly off the vagus nerve in the neck and passed immediately to the lower pole of the thyroid gland. Dr. Beaver and Dr. Pemberton had encountered one other such case, a year earlier, and have reported it in the March, 1932, number of *Surgery, Gynecology, and Obstetrics*.

The importance to the goiter surgeon of these two anomalies, I think, needs no further elaboration.

HEADACHES ASSOCIATED WITH ENDOCRINE DISORDERS

DANIEL L. SEXTON, M.D.

ST. LOUIS

Writers on the subject of headache often emphasize that it is a symptom and not a separate disease entity. That headache does occur in the absence of specific disease is well known and is exemplified in proved cases of simple exhaustion, emotional strain, weakness, following the excessive use of stimulants, improper hygienic conditions such as defective ventilation, irregular meals, insufficient sleep; and in a number of other instances well known to all. The etiology of headache as a symptom of specific disease may vary from coryza to a brain tumor. Even to mention the hundred or more organic causes to which headache is attributed would more than occupy the time allotted; therefore this discussion will be limited to that group of cases definitely related to endocrine disorders or remedial only with endocrine therapy.

This group comprises a relatively small percentage when one recalls the frequency of headache as a symptom. Eustis found it complained of in 49 per cent of 750 routine office patients. It is of interest that he found it as general in men as in women. This latter finding does not hold in the endocrine group because of the large percentage of menstrual headaches found in women.

In attempting to associate headache with an

endocrine disorder information should be obtained regarding its exact location, radiation, depth, intensity, character, duration, frequency, progress, and associated symptoms and relations to other body functions. By including these points routinely in obtaining the history one is apt to establish an etiological working basis from the very beginning. In this group, especially, the relation of the headache to other physiologic functions is of the utmost importance. A headache which begins at the onset of menses and occurs regularly at menstruation or the headache that is relieved only by pregnancy should immediately be given an endocrine classification.

It must be understood that headache may result from more than one cause and a complete examination is indicated in every case before any conclusion can be drawn. A careful physical examination should follow the history with special attention to the established signs of endocrine disorders. These signs will be enumerated under their respective class. To complete the study of the patient, there must be a careful ocular and otolaryngological examination, an analysis of blood morphology and blood chemistry, roentgen ray studies of the skull, and any other special examination that may be indicated from the history and physical examination.

While a certain percentage of endocrine headaches are of the migrainous type, let it be thoroughly understood that glandular treatment is not advocated for the general run of migraine, nor is any claim made that glandular therapy will relieve that large class of headaches not responsive to the usual treatment.

Ovarian, pituitary and thyroid disorders constitute the most common endocrine dyscrasias in which headache is an associated symptom. There is sufficient clinical evidence to show that headache is common in cases of suspected mild suprarenal cortex deficiency, but so little concrete information is available concerning this type of headache that one can hardly include such suspected cases.

An understanding of the various endocrine syndromes is essential in classifying headaches belonging to the glandular group. These various syndromes will be discussed separately and case reports, typical as far as possible of these respective disorders, will be included.

Ovarian.—Headaches of the ovarian type are considered as such because of their frequent association with menstrual disorders. There may or may not be evidence of gonadal insufficiency as manifested by diminished menstrual flow. Gonadal insufficiency may be partial (eunuchoid) or complete (castrate). In the group with

partial insufficiency are included those persons in whom there never has been complete ovarian development. The woman with primary ovarian insufficiency, that is, in whom development never has occurred sufficiently, has a characteristic statural make-up, the result of overgrowth of the long bones. She is slender and, generally speaking, is of the ptotic type. She possesses the eunuchoid measurements in which the lower measurement (from the proximal border of the symphysis pubis to the soles of the feet) exceeds the upper measurement (from the proximal border of the symphysis to the vertex) and the total span exceeds the height. The palate is high, the teeth are crowded and the slender graceful fingers taper off gradually. The menstrual history reveals a delay in onset, usually occurring at fifteen or later, with irregularity and subsequent scant flow. Dysmenorrhea of varying degrees is a frequent complaint. In this group of partial insufficiency also belong those cases in which an ovary or part of one or both ovaries has been resected. In the post-operative cases there is no characteristic statural make-up and the menstrual history is dependent on pathology present prior to operation. For instance, in the case of cystic ovaries menstruation is often prolonged and profuse contrary to the scantiness associated with eunuchoidism.

The complaint of headache in these individuals is definitely associated with the menses, occurring before, during or after the period. The most common location is in the occiput radiating toward the shoulders. It may vary in intensity from a dull ache to that of a boring nature. As time goes on the headaches become more severe and more frequent, occurring during the intermenstrual period as well as at menses. Very often they are of the migrainous type and then are usually hemicranial, preceded by some localized or general aura. There may be ocular or gastric symptoms or both. These people suffer from constipation, fullness and distention after meals, difficult swallowing, palpitation, vertigo, and have a multitude of symptoms that are referable to every system of the body. A constant sequela is a vasomotor upset manifested by paresthesias, cold extremities and frequently hot flushes, even in the young. The degree of constitutional reaction is directly proportional to the amount of active glandular tissue that remains. Libido and potency are greatly diminished. In these patients correction of constipation and of errors in refraction, nasal treatment, sedatives and other forms of therapy fail to give adequate relief. Upon administration of the follicular hormone (theelin) hypodermically, they show improvement of variable degree. Less effective is the hormone by mouth (theelol).

REPORT OF CASES

EUNUCHOIDISM

Case 1. Mrs. F. S., aged 29 years, complained of severe premenstrual headaches of four days' duration which subsided with the onset of menses. They were chiefly occipital, radiating into the postcervical area, not accompanied by gastric or ocular symptoms. Menses began at fifteen, occurring every twenty-eight days, of five days' duration. The flow was scant. She had been married for eight years but had never conceived; libido was nil. Her mother had suffered from menstrual headaches. Other symptoms were fatigue, nervousness, emotionalism and constipation.

Examination.—She was of the eunuchoid type; tall and slender with lower measurements exceeding the upper and the span being greater than the height. Emotional instability was pronounced. The blood pressure was lowered. Pelvic examination revealed infantile genital development. The basal metabolic rate was normal. Ocular examination with lens correction did not affect headaches.

Diagnosis.—Eunuchoidism.

Treatment.—Theelin, 2 c.c. two times weekly together with symptomatic treatment for constipation.

Course.—The intensity of the headaches was relieved and very frequently a period passed with no headache. When headaches did occur under continued treatment they could be accounted for by overexertion.

HYPOGONADISM (POSTOPERATIVE); MIGRAINE;
SPASTIC COLON

Case 2. Miss B. K., aged 38, a school teacher, was first seen May 11, 1928, during an attack of headache. She was in a semiconscious state which was thought at the time to be due to drug hypnosis, but subsequent observations proved this impression to be incorrect. She was next seen eleven months later during an attack in which she was in a semiconscious state for four days. She stated that in the interim she had been having severe headaches weekly always coming on toward the end of the week. The headaches were general, radiating from the occiput into the shoulders. They were of a pounding character and during the severe attacks she would seek relief by throwing her head against the bedpost. She became blind and often fell if she got out of bed unassisted. She could count on a mild attack occurring at the end of each week and an incapacitating one before or during the menstrual period. The longest duration of an attack was seven days. She had menstrual headaches from the early twenties but only since oophorectomy was done had they been severe. Bowels very obstinate, more so following an attack. She was of a nervous and irritable disposition and suffered from insomnia. When nervousness was worse hot flushes occurred. There had been resection of an ovarian cyst four years previously and three years before the operation radium had been implanted into the pelvis because of intractable leukorrhea. Patient's mother had had sick headaches at the time of menses with cessation at the menopause.

Physical Examination.—All findings were negative except for a lowered blood pressure, 94/58, and some tenderness in the right adnexa.

Positive Laboratory Findings.—Mild secondary anemia, subacidity, and slightly lowered basal metabolic rate (minus 14 per cent).

Röntgen Ray.—Studies of the skull, chest and gastro-intestinal tract, including the gallbladder, revealed spastic constipation only.

Eyes.—An error in refraction had been corrected and a slight postnasal inflammation was treated.

Diagnosis.—(1) Hypogonadism, postoperative; (2) migraine, (3) spastic colon.

Treatment.—(1) Whole ovarian substance, 2 c.c. hypodermically three times a week. (2) Desiccated thyroid, grains $\frac{1}{2}$ three times a day. (3) Symptomatic treatment for constipation and insomnia.

Course.—This treatment was continued for eight weeks; the patient was very much relieved and left the city for her summer vacation. While mild attacks continued the next severe headache came the following December. Hypodermics of ovarian substance were resumed for about a month and thereafter were given only during the week preceding the expected menstrual period. In March, 1930, the follicular hormone, estrogen, was substituted for ovarian substance and later theelin replaced estrogen. The results in general were satisfactory. The interval between headaches was greatly prolonged and the attacks were less severe. During the year of 1931 she had but four bad headaches and about the same number during 1932 although during this last year not one incapacitated her. The interval and character of menses were unaltered. Her weight had increased from 111 pounds in 1928 to 128 pounds in 1932 and her blood pressure showed a systolic increase of 16 points. Her capacity for work had greatly increased; she was now attending night school three nights a week in addition to increased daytime duties. When headaches did occur they were the result of overwork. She had learned to detect the symptoms of impending headache and would come in for injections. By giving theelin in dosages of 100 units two to three times weekly at these times, headaches were limited to mild severity and very often were completely aborted.

MENOPAUSE (MIGRAINOUS HEADACHES); CHRONIC
TONSILLITIS AND CATARRHAL DEAFNESS; SUB-
ACIDITY; SPASTIC COLON

Case 3. Miss A. O., aged 44, numbered among her chief complaints sick headaches, postmenstrual in time, accompanied by nausea and vomiting. They were of a dull boring type varying in severity, frequently hemicranial but often localized in the occiput and radiating toward the shoulders. If she overexerted, these headaches occurred during the intermenstrual interval. In the last year the menses had become irregular with a definite tendency to scantiness and during this time the headaches had become increasingly worse. Additional symptoms were constipation, general myalgia and arthralgia, indigestion, insomnia, emotionalism, fear for safety, shortness of breath on slight exertion, hot flushes and paresthesias. There was no history of headache in the immediate family.

Physical Examination.—The patient was of the ptotic type having only fair control of her emotions. Aside from partial bilateral deafness there were no positive regional findings.

Laboratory.—Studies showed a mild subacidity and basal metabolic rate of minus 15 per cent.

Roentgen Ray.—Chest, skull, gastro-intestinal tract and gallbladder were negative.

Ear, Nose and Throat.—Chronic tonsillitis and catarrhal deafness. Had sinusitis in the past but proper drainage had been established with no relief from headaches.

Eyes.—Eyes had been properly cared for by a competent oculist.

Diagnosis.—(1) Menopause (migrainous headaches); (2) chronic tonsillitis and catarrhal deafness; (3) subacidity; (4) spastic colon.

Treatment.—Ovarian substance and the follicular hormone, theelin, hypodermically; two grains of desiccated thyroid orally, daily; symptomatic treatment for subacidity and constipation.

Course.—The patient was greatly relieved and passed through two menstrual periods without headaches. Ovarian substance and theelin were temporarily discontinued. Some months later the headaches recurred but were controlled by 2 c.c. of theelin three times during the week preceding menstruation.

PITUITARY

In Engellbach's series of 609 cases of uncomplicated pituitarism, 284 had severe headache 14 of which had pituitary tumors. Of the 270 cases without tumor, 90 per cent occurred in adults, 7.4 per cent in adolescents, and 3.6 per cent during the juvenile age. Fifty of the 270 (18.5 per cent) had headaches of the typical migrainous type.

In order to associate headaches with disturbances of the pituitary the functions of this gland as far as have been determined must be known. The pituitary body is divided into an anterior glandular portion, a posterior nervous portion, and a questionable third middle portion.

The chief functions of the anterior lobe are the stimulation of (1) statural growth, (2) sexual development and the maintenance of normal sex function, (3) thyroid activity, and (4) mammary development. Should anterior lobe insufficiency occur in preadult life, statural and sexual infantilism results; its occurrence in adult life, after physical and sexual development have been attained, affects only sexual function. In adult life all forms of secondary hypogonadism not found to be due to ovarian disease are attributed to anterior pituitary insufficiency. Anterior lobe pituitary insufficiency with secondary hypogonadism is differentiated from primary hypogonadism chiefly by stature, the long bones showing lack of growth in the hypopituitary and overgrowth in the eunuchoid types. Muscular fatigue is a common accompaniment of hypopituitarism, as is also nervous instability to a considerable degree. As a rule, however, ovarian insufficiency due to primary hypopituitarism is not accompanied by the multitude of symptoms that accompanies eunuchoidism.

Secretions from the posterior and middle lobes unite to form the commercial extract, pituitrin. Among the functions attributed to these portions of the pituitary are the stimulation of smooth muscle; a diuretic-antidiuretic action; and an influencing factor in fat and carbohydrate metabolism. Obesity with adiposity about the pelvic and pectoral girdles is attributed to a disturbance in the region of the hypophysis. Experimental evidence has been presented to show that the hypophysis can be removed without obesity resulting. The fact

remains, however, that girdle obesity is so frequently an accompaniment of irregular and diminished menses, which is an accepted sign of pituitary insufficiency, that patients of this group are classified as being the pituitary type. Careful differential diagnosis including roentgen ray examination of the skull and ocular examination is stressed in these types because of the possibility of pituitary tumor.

Pituitary headaches have no special characteristics which would relate them to the hypophysis. They simulate migraine more than any other type of headache in this group.

In women, pregnancy may be the only thing that will relieve headache. Because of the presence of large amounts of anterior pituitary-like hormone in the urine during pregnancy, this would seem to be an important link in the diagnosis of "pituitary headache." In treating such cases, the plan is to administer those hormones that are increased in the body during pregnancy.

There is another group of patients in whom the body functions give no clue as to the origin of headache but in whom pituitary preparations are beneficial. Mayers in 1930 reported sixty cases out of approximately 5000 (1.6 per cent) that were not responsive to any therapy other than pituitrin hypodermically. It has been argued that such an effect is a physiological drug action. No satisfactory explanation has been advanced for the relief these drugs afford, but that they often do alleviate the pain is undeniable. Just as pituitary preparations may relieve headache, they very often aggravate it. Either effect is considered as significant of pituitary headache. In the event the headache is aggravated reduced dosages are generally sure to give relief.

REPORT OF CASES

THYROPITUITARISM; MIGRAINE

Case 4. D. McN., aged 14½ years, complained of headache occurring every two or three weeks accompanied by nausea and vomiting. Other complaints were overweight, poor school work and lassitude. The developmental history was normal except for increased weight beginning before one year and increasing with age. For the last three to four years headaches of a general boring character had occurred at intervals of two to three weeks accompanied by nausea and vomiting, and usually somnolence throughout the duration of the attacks. His father had dull headaches at times, not accompanied by nausea or vomiting. A paternal uncle had migraine attacks, and another paternal uncle had dull headaches similar to those of the father.

Physical Examination.—There was general obesity with girdle adiposity and retarded genital development. Pulse, 60; blood pressure, 102/68; occasional cardiac extrasystoles.

Laboratory.—Electrocardiogram showed an occasional extrasystole, and the basal metabolism rate was minus 18 per cent.

Roentgen Ray.—The skull and chest were negative; examination of the osseous system revealed delayed development.

Ocular Examination.—Findings were negative.

Diagnosis.—(1) Thyropituitarism; (2) migraine.

Treatment.—(1) Pituitrin and the anterior pituitary-like sex hormone (Antuitrin-S)* hypodermically. (2) Desiccated thyroid orally. (3) Fluid extract of cannabis indica, drops 5 before meals, for premonition of headache.

The treatment was continued for two months during which time the patient had but one headache and that was not severe and did not incapacitate him. He later became irregular in following treatment and with this irregularity there occurred a return of the headaches.

PITUITARY HEADACHE; SECONDARY ANEMIA

Case 5. Mrs. D. D., aged 29, was referred by Dr. W. M. Moffat of the Santa Barbara Clinic in October, 1930, with the following notation: "... she has had headaches since the age of seventeen that have gradually increased in frequency and severity. They are generalized including the whole head, neck and shoulders. Usually she awakens with a headache which may stop about 10 o'clock and return about 2. Nothing relieves it except codeine. The only thing that gives relief from headaches is pregnancy. She has had numerous medical studies made including three months' observation under an allergist, repeated ocular examinations, two nasal operations, and all known forms of symptomatic treatment. While being observed at the Santa Barbara Clinic, it was found that she was somewhat relieved by injections of corpus luteum. Physical examination revealed no findings of significance. Laboratory studies showed moderate secondary anemia only; roentgen ray examination revealed a bony ridge across the sella turcica, the significance of which was undetermined. ... trial therapy on pituitrin, adrenalin and antuitrin yielded some improved feeling."

Diagnosis.—Pituitary headaches; mild secondary anemia. This diagnosis was based on the history of freedom from headaches during pregnancies, the absence of positive etiological findings and the failure of treatment other than corpus luteum which gave limited relief.

Treatment.—Antuitrin-S hypodermically.

Course.—Results from these injections were almost phenomenal for they relieved the headache entirely. Without the patient's knowledge other preparations were substituted to determine the degree of psychic effect. Moderate relief was furnished by the lipid extract of corpus luteum. There was no relief from ovarian substance, estrogen, antuitrin, pituitrin or adrenalin. Antuitrin, which had been found to aggravate the headache, again increased the intensity, as also did pituitrin. Antuitrin-S was continued over several months, gradually being omitted. After this omission headaches occurred on several occasions but instant relief was obtained from injections of antuitrin-S.

THYROID

Headache associated with symptoms of mild hypothyroidism in the absence of other etiological factors is considered of the exhaustive type

* This is the anterior pituitary-like hormone obtained from urine of pregnant women. A plentiful supply was furnished for experimental use by Dr. E. A. Sharp, of Parke, Davis & Co., Detroit.

and relief can be reasonably expected by thyroid therapy. In determining thyroid deficiency the history must include, if possible, the developmental history of the patient. The time of eruption of teeth, the time of walking and talking and other steps in the progress of the first few years of life often give a clue that otherwise would not be uncovered, for it is recalled that congenital hypothyroidism is associated with delayed physical development. The mental alertness of the patient through the early school years should be determined, for again it is well known that hypothyroidism is accompanied by mental dullness. The more common symptoms of mild thyroid deficiency in later life are: A tendency to somnolence, early fatigue upon exertion, dryness of the skin and scalp and sparsity of hair. The headache in these types is almost always band-like in character coming on toward the end of the day. Determination of the basal metabolic rate is of diagnostic aid but better still is a favorable response to thyroid therapy.

REPORT OF CASE

HYPOTHYROIDISM, MILD; ATONIC CONSTIPATION

Case 6. Mr. J. W. B., aged 35, complained of headaches accompanied by nausea and a tendency to constipation. The headaches came on suddenly about a year ago, pain beginning in the occiput and spreading over the entire head, being intense and boring in character. For three or four hours preceding the attack there was a prodromal stage of depression. Headaches lasted about three hours leaving him very nervous for the following twenty-four hours. Libido was reduced. The occurrence of hives on several occasions led to the investigation of allergy as the cause. He was found to be sensitive to certain foods, withdrawal of which relieved him of the hives but not the headaches. Bowels were regulated by laxative. There was no family history of headaches.

Physical Examination.—The patient was of normal weight with a tendency to dryness of skin and coarseness of hair. Basal metabolic rate was minus 15 per cent, pulse 78, and blood pressure 96/64. Roentgen ray of the skull was negative.

Diagnosis.—(1) Mild hypothyroidism; (2) atonic constipation.

Treatment.—The patient was given desiccated thyroid, grain 1, t.i.d., which he tolerated well. He was given fluid extract of cannabis indica after each meal for a month when it was discontinued. For the following six months he continued on desiccated thyroid and had but one headache during this time, while previously the headaches occurred at weekly intervals. His fatigued state has been greatly improved.

DISCUSSION

While ovarian, pituitary and thyroid disorders have been discussed singly, two or more glands are often involved in the same individual. The diagnosis in such cases is made along the same plan by which each single gland disorder is determined. An example of this is case 4

diagnosed as thyropituitarism. Here the diagnosis of primary thyroid deficiency of a mild degree is based on overweight in infancy, lassitude throughout life, even before the onset of headaches, and poor school work. That the pituitary is also involved is determined by genital underdevelopment associated with the pituitary type of stature and weight distribution. The basal metabolic rate of minus 18 per cent is considered the result of combined thyroid and pituitary deficiency since insufficient secretion of either gland will cause a suppression of the metabolic rate. The close association of migraine with endocrine disorders raises the question of whether the latter is not one of the direct causes of this malady. While endocrine dysfunctions cannot be considered as the basic etiology of migraine, they undoubtedly contribute to and their presence unquestionably intensifies the attacks. Many of the headaches associated with endocrine disorders are of a migrainous type although not having all the characteristics of typical migraine. Typical migraine is characterized by (1) a prodromal stage of lassitude; (2) an aura, which may be visual, speech, auditory, or gustatory; (3) the actual attack, which is most frequently hemispherical, and (4) the associated ocular symptoms which may range from simple scotoma to complete blindness, or gastric symptoms manifested particularly by nausea and vomiting. Heredity and periodicity of the attacks complete the syndrome. Many physicians are averse to making a diagnosis of migraine unless there is an hereditary element present. Cases 2, 3, 4 and 6 all gave rather characteristic histories of migraine, and in cases 2 and 4 a family history was obtainable.

In the treatment of headaches associated with endocrine disorders, other systemic disorders must be treated concurrently. Dietary indiscretions must be corrected and faulty elimination must be overcome for, as Eustis has shown, 86 per cent of patients complaining of headache have associated intestinal toxemia. Overwork, both physical and mental, and worry must be excluded as far as possible. Proper sleep is necessary, as is also light outdoor exercise.

Especially in women is the psychic state upset. Undoubtedly a number of these patients are relieved from their headaches when they know that something is being done for them. In case 5, however, the psychic element was not a factor, for when other endocrine treatment was substituted for Antuitrin-S (without the patient's knowledge) no relief was obtained. In headache associated with menstruation, Martin has reported relief by inducing artificial menopause by radiation in women of forty or

over. It has been the writer's experience that artificial menopause ultimately aggravates the symptoms, and certainly there is no assurance that the natural menopause signifies relief although such does frequently occur. Endocrine treatment is advocated as an adjuvant to other forms of treatment in cases of obstinate headache. Sufficient amount must be given to be effective and, with the exception of thyroid, endocrine therapy is best given hypodermically. The follicular hormone by mouth, theelin, progynon, and amniotin are of distinct value orally in sufficient dosage, but less effective than theelin and amniotin hypodermically. While it has been necessary to continue treatment over a prolonged period in the castrates of early life remissions of long duration have been obtained in other cases after treatment of a few weeks.

CONCLUSIONS

1. Headache is a frequent complaint in endocrine disorders. It is most common in cases of ovarian, pituitary and thyroid deficiency. In castrates of early life it is an almost constant complaint.

2. The headache of ovarian deficiency is most often localized in the occiput; that of thyroid deficiency is band-like in character encircling the scalp; the pituitary headache has no special characteristics but very often resembles migraine.

3. While endocrine disorders are not held to be the cause of migraine, its presence in these cases is of relatively high incidence.

4. Endocrine therapy is not considered specific for any form of headache but occasionally pituitary preparations are the only agents that give relief.

5. Glandular treatment must be considered as an adjuvant to other indicated measures in the general therapeutic plan.

937 University Club Building.

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DISCUSSION

DR. A. A. WERNER, St. Louis: Dr. Sexton spoke of pituitary headaches accompanying hypofunction of the ovaries. These headaches also occur, as the doctor has told you, in the menopause. We know that if menstruation does not occur there is hypertrophy of the anterior lobe of the pituitary gland. When a

subtotal thyroidectomy is done the remaining portion of the gland enlarges in an attempt to supply the individual with sufficient thyroxin to maintain normal metabolic balance. The ovaries do not function without first being stimulated by the anterior lobe pituitary sex hormone. Removal of the ovaries usually results in anterior lobe pituitary enlargement, which is a compensatory hypertrophy. The pituitary gland is encased in a bony cavity covered over by a dense membrane, the diaphragma sellae, which is continuous with the tentorium cerebelli, the falx cerebri and other reflexions of the dura mater. Enlargement of the anterior lobe causes pressure, described usually as a dull, painful ache situated back of the eyes, or of deep frontotemporal location. Again, this pain may be band-like radiating along the attachment of the tentorium cerebelli to the occiput or vertex as a result of radiation along the falx cerebri.

I think the explanation for the disappearance of headaches following the menopause is that at that period in life the ovaries atrophy, sexual life is over, there is no demand made upon the anterior lobe pituitary to produce sex hormone for ovarian stimulation, therefore no hypertrophy, no pressure, no headaches.

THE EFFECT OF THE ANTERIOR LOBE PITUITARY, THE THYROID AND THE GONADS UPON PREADULT GROWTH

AUGUST A. WERNER, M.D.

ST. LOUIS

The endocrine glands which affect preadult growth are the anterior lobe pituitary, the thyroid, the gonads, the pineal and the thymus. Of these glands the effect of the pineal and thymus upon growth are of minor importance when compared with the influence of the anterior lobe pituitary, thyroid and gonads. Pineal disturbances affecting growth are rare. Abnormal conditions attributable to thymus dysfunction are more frequently seen than those of pineal origin. The condition known as status thymicolymphaticus can probably be regarded as the indication of an inherent lowering of the intensiveness of the physical and chemical processes concerned in cell growth, and consequently in tissue development. Preadult growth and sexual development are largely contingent upon the time of output of certain hormonal secretions and the degree of function of the anterior lobe pituitary, thyroid and gonads.

ANTERIOR LOBE PITUITARY

The anterior lobe pituitary seemingly has more diverse functions than any of the ductless glands. It is probably the most important gland in the body. Its influence upon skeletal and tissue growth and as an activator of certain

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gonadal functions has been definitely established.

Evans and Simpson¹ and Corner² using alkaline extracts of the anterior hypophysis produced lactation in virginal rats and young adult ovariectomized rabbits, respectively. Other experimenters using anterior pituitary extracts claim like results in dogs, hogs and cattle.

Loeb and Bassett³ using an acid extract from the anterior pituitary of cattle which they injected into guinea pigs, produced thyroid enlargement, parenchymatous hyperplasia, decrease of colloid and iodine in the gland with an increase of iodine in the blood. Friedgood⁴ by the daily intraperitoneal administration of anterior pituitary gland extracts induced a syndrome in guinea pigs which is characterized by increased basal metabolic rate, marked loss of weight, hypertrophy and hyperplasia of the thyroid gland, hyperplasia of the suprarenal cortex, exophthalmos, tachycardia and abnormal restlessness and hyperexcitability. The pathology of the thyroid gland revealed changes in the acinar epithelium and colloid, which in well established cases are indistinguishable from those recorded for human exophthalmic goiter.

These experiments indicate rather definitely that the anterior lobe pituitary secretes a hormone capable of producing a condition remarkably like that of exophthalmic goiter as seen in man. This substance has been called the thyrotropic hormone.

Barnes and Regan⁵ showed that the anterior lobe pituitary exercises a marked influence on carbohydrate metabolism. Other endocrine activities have been attributed to the anterior lobe pituitary, but they will not be mentioned for our knowledge of their presence is more or less hypothetical.

This discussion will now be confined to the growth and gonad stimulating hormones of the anterior lobe. This gland has three types of cells, designated by their affinity for certain tissue dyes as, first, chromophobe which stain poorly; second, eosinophile which stain with acid dyes and, third, basophile which stain with basic dyes.

There exists a difference of opinion at the present time as to the physiologic importance of the chromophobe cells. It is thought by some that these cells may later develop into the eosinophilic and basophilic types, while others believe that only basophilic cells are derived from them. Their status has not been established as yet. It is known that chromophobe tumors do not per se produce hypersecretory effects but are chiefly pressure tumors. It has been definitely demonstrated by Cushing and

others that the growth hormone is produced by the eosinophilic cells. Cytologic examination of anterior lobe pituitary tumors of gigantism and acromegaly show a vast preponderance of these cells. It is believed by many investigators that the gonad stimulating hormone (or hormones) is elaborated by the basophilic cells. The effect of the growth hormone in preadult life is more noticeable upon osseous than upon soft tissues of the body. That all the tissues of the body are stimulated by the growth hormone has been amply proved by observation of cases of gigantism and acromegaly. Cushing and Davidoff⁶ showed that all structures of the body, including the lungs, heart, liver, gastrointestinal tract, etc., are greatly enlarged in acromegaly, which is the postadult clinical type resulting from excessive secretion of the growth hormone of the anterior lobe pituitary.

The effect of the anterior lobe gonad stimulating hormone upon growth is indirect, by initiating activity of the gonads which in turn influence ossification and union of the epiphyses with the diaphyses, after which growth in the long axes of the bones is negligible. Figures 1 and 2 show a eunuchoid male, aged 24 years, whose phalangeal and metacarpal epiphyses, which should normally be closed at 14 to 15 years of age, still remain wide open. So long as the epiphyses are ununited with the diaphyses long bone growth will continue, providing sufficient anterior lobe growth hormone is secreted.

If one bears in mind the growth factor of the anterior lobe pituitary and that onset of gonadal function stimulates union of the epiphyses with the diaphyses of the long bones and the fact that the degree of hormonal secretion of any endo-



Fig. 1. Eunuchoid male, aged 24 years. Note disproportionate measurements.



Fig. 2. Hand of eunuchoid man (figure 1) showing open epiphyses.

crine gland is a variable factor, then it is rather easy to understand the cause for variation in height and bodily configuration of individuals.

Figure 3 shows the skeletal type which should and does occur when the anterior lobe pituitary growth and gonad stimulating hormones are secreted in normal amounts and at the correct time in the preadult life cycle. It will be noticed

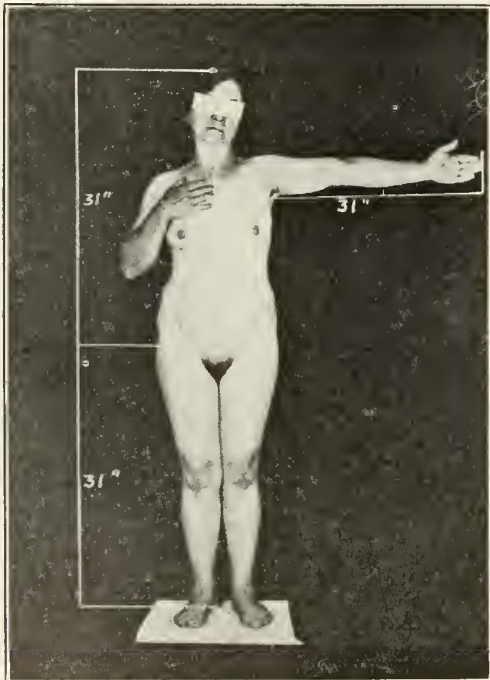


Fig. 3. Note equal measurements.

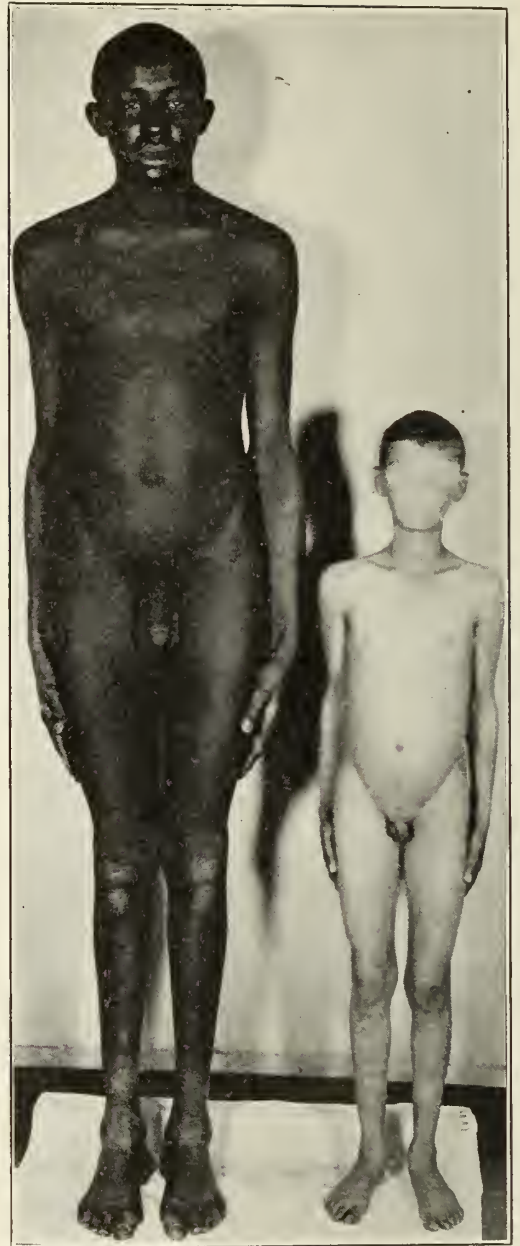


Fig. 4. Negro, aged 17 years, lower measurement 10 inches greater than upper measurement. White boy, anterior lobe pituitary infantilism, aged 15 years, 7 months.

that all measurements are equal and the history informs us that this woman had her first menstruation at age 12 years. Onset of gonadal function can be more easily determined in the woman than in the man because of menstruation in the former. Had this patient had onset of menstruation at age 14 or 15 years with consequent delay in epiphyseal closure and in the presence of normal secretion of anterior lobe growth hormone, then the bones of the extremities, which have epiphyses in contrast to those

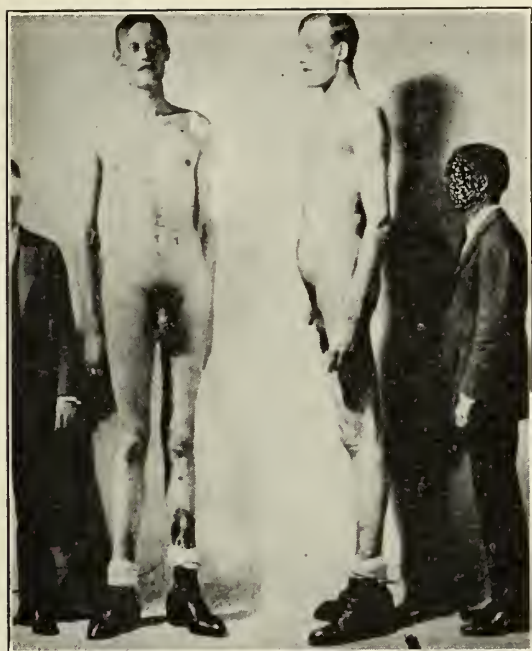


Fig. 5. Eunuchoid giant 7 ft. 8 $\frac{3}{4}$ inches tall, beside man 5 ft. 11 inches tall.

of the torso which have none, would have continued to grow longer for 2 or 3 years more, with a tendency to the eunuchoid type of individual in which the lower measurements and one half span are longer than the upper measurement from the upper border of the symphysis to the vertex of the head.

If the anterior lobe growth hormone is secreted at a rate greater than normal, yet not excessively, in the presence of normal onset and function of the gonads, then the type of individual seen in figure 4 (Negro) is had. This Negro boy is aged 17 years and is 76 inches tall. His epiphyses show normal development and union with the diaphyses and his growth in height is practically completed. His lower measurement is 10 inches longer than his upper measurement. He is not a eunuchoid for gonadal function was and is normal. The sella turcica measures 10 by 14 mm. Basal metabolism is normal.

If the anterior lobe growth hormone is secreted excessively in the presence of normal or delayed onset and function of the gonads then gigantism results, usually with the eunuchoid type of measurements, as is seen in figure 5 (Craemer). This man is 25 years of age and is 7 feet 8 $\frac{3}{4}$ inches tall, weight 312 pounds. The lower measurement is 8.3 inches greater than the upper measurement.

If the anterior lobe growth hormone is secreted (probably excessively) after the attainment of adult life (aged 23 to 25 years) in the

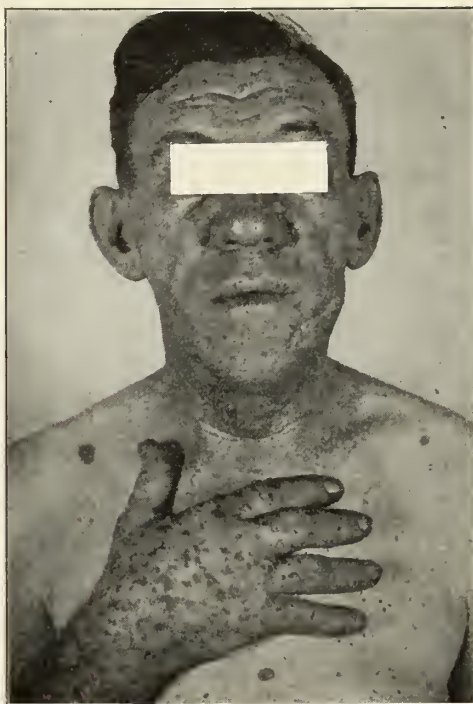


Fig. 6. Acromegaly of 4 years' duration, man aged 50 years.

presence of closed epiphyses then acromegaly results as seen in figure 6. At age 44 years this man began to manifest symptoms of hypersecretion of the anterior lobe pituitary growth hormone resulting in marked acromegaly at age 50 years. The tumor was found to be of leucic nature and proper medication checked the course of the disease.

Failure of the anterior lobe pituitary to secrete sufficient growth and sex stimulating hormones in infancy, childhood and adolescence results in the condition known as infantilism. Figure 4 (white boy) is a typical case of pure anterior lobe pituitary infantilism in a boy 15 years 7 months of age whose height is 52 inches (normal 61.1 to 65.3 inches) and whose weight is 51 pounds (normal 91.6 to 116.2 pounds). Note the absence of development of the secondary sex characters due to insufficient sex stimulating hormone of the anterior lobe pituitary. The sella turcica is of the incarcerated type measuring 4.5 by 5.0 mm. (normal 10 by 12 to 15 mm.). Basal metabolism is plus 23 per cent. (This basal reading can be disregarded, for it is calculated from tables based upon normal size for age.) Thyroid function is normal, as evidenced by intelligence and absence of any signs or symptoms of hyperthyroidism or hypothyroidism. The infantilism in this case results from incarceration of the pituitary gland thereby inhibiting normal growth and function of the anterior lobe.

THE THYROID GLAND

The primary function of the thyroid gland is the production of thyroxin. Colloid which probably acts as a reservoir for iodine and thyroxin is also produced and stored in the lumina of the vesicles.

Plummer⁷ states that "the chemical reactions carried out by thyroxin in the tissues are not known but that the chemical and physiological properties of thyroxin indicate that it is used directly in the processes of oxidation as a catalytic agent."

Crile⁸ states that "thyroxin raises the potential of cells. Potential represents the workable energy of cells or their ability to produce energy under the influence of certain stimuli. Thyroxin influences the rate of flow or interchange of chemical substances within the cells. It steps up their biochemical activity. Iodine is one of the best elements to facilitate rate of electrical flow in cells, therefore thyroxin containing 60 per cent of iodine is a good medium to raise potential."

All cells of the body, regardless of how simple or specialized they may be, are influenced directly or indirectly by normal, increased or diminished thyroid function. Basal metabolism is directly influenced by the thyroxin content of the tissues of the body. To thyroxin is also attributed influence upon growth, the circulation, interglandular equilibrium, intellectual and emotional stability and the immunizing powers of the body.

We are here concerned with the effect of thyroid function upon preadult growth. If we accept the ideas of Plummer and Crile as mentioned above, then with insufficient thyroxin in the tissues of the body we should have decreased cellular activity with a consequent retardation of growth. This is exactly the condition that we find in cretinism and infantile and childhood myxedema.

Hypothyroidism may be primary or secondary. Primary hypothyroidism may result from subnormal prenatal development or destruction of the thyroid producing cretinism; or from postnatal destruction, removal or loss of function, resulting in myxedema. Another conceivable cause may be a temporary functional disability of the gland during which time the response of the thyroid may be inadequate to meet the demands of the tissues of the body. A newer and plausible theory as to the cause of some cases of hypothyroidism may be the absence or an insufficient amount of the thyrotropic hormone of the anterior lobe pituitary mentioned above.

Secondary hypothyroidism may be conceived to exist when a thyroid gland capable of normal

function does not elaborate sufficient thyroxin because of subnormal physiological reactions in the body which do not demand the maintenance of a normal thyroxin level. Conditions in which this status may exist are starvation, wasting diseases, etc.

CRETINISM

Cretinism is a disease originating during fetal life, due to a developmental defect or destruction of the thyroid gland with consequent insufficient thyroid secretion for normal development of the brain and body. There are two types of cretinism, viz., endemic and sporadic.

The disease is usually manifest during the first year of life. The first evidence that the child may be cretinous is overweight at birth, above 8½ pounds; delayed dentition past 7 or 8 months; delay in talking and walking beyond 14 to 15 months. The child may grow in weight but not in stature. The face usually becomes swollen and bloated, looks large, has a pale, waxy, sallow tint, eyelids are puffy, alae nasi thick, and the bridge of the nose depressed and flat. The lips are thick, the tongue enlarged and may hang out of the mouth with dribbling of saliva. The first set of teeth erupt late and some may be absent, are badly formed and show early decay. Second dentition may not begin until adult life and then be very imperfect.

Growth is slow due to delayed osseous development, there is late appearance of the centers of ossification and the fontanelles close late. There is frequent strabismus and muscular weakness. The abdomen is swollen (pot-belly) and umbilical hernia is often present. The hands and feet are underdeveloped and pudgy, the legs thick and short and the gait unsteady and waddling. The skin is dry and the hair of the scalp thin and brittle. The temperature is subnormal, the pulse slow and basal metabolism decreased. The mentality is decreased even to imbecility. If the disease is untreated cretins grow to be dwarfs, may develop a clown-like intelligence, be good humored and preserve a perpetual childhood.

Figure 7 shows a cretin 15½ years of age (right). Note the generalized underdevelopment. Roentgenograms show this patient to have the osseous development for a child of only 8 years of age and a mental age of 7 years, 1 month, with an intelligent quotient of 47 per cent.

Infantile and childhood myxedema is a constitutional disease occurring in infants and children due to a decrease or absence of thyroid secretion. It is probably due to thyroiditis and differs from adult myxedema only in arrested development, the degree of which depends up-



Fig. 7. Cretin (right) aged $15\frac{1}{2}$ years, beside normal boy same age.

on the age at onset and the amount of thyroid deficiency.

Figure 8 (left) shows a boy $9\frac{1}{2}$ years of age when he came under my observation. Weight at birth 10 pounds; he did not talk until 5 years of age and when first seen by me he could not be understood. He was imbecilic, could learn nothing and was very unruly. He had gained much weight in the previous two years. He was 50 inches tall. Nude weight was 81 pounds. (Normal weight for this age and height 58 pounds.) The mouth was open, nasal bridge low and nose pinched. Left internal strabismus. Lower teeth very crowded and irregularly placed. All first premolars unerupted, upper central incisors erupting but badly misplaced. Testes size of small olive seeds, penis infantile with long prepuce. Laboratory findings negative except basal metabolism which was minus 17 per cent.

This boy was put on proper endocrine therapy and the picture on the right shows him 18 months later. He talks plainly, is in the third grade in school, passes all studies and is promoted each term. At the present time he has been under my care for 4 years; he is in the 6th grade at school, has grown 13 inches and is a perfectly normal boy for his age. Some might wish to diagnose this case cretinism. Had this

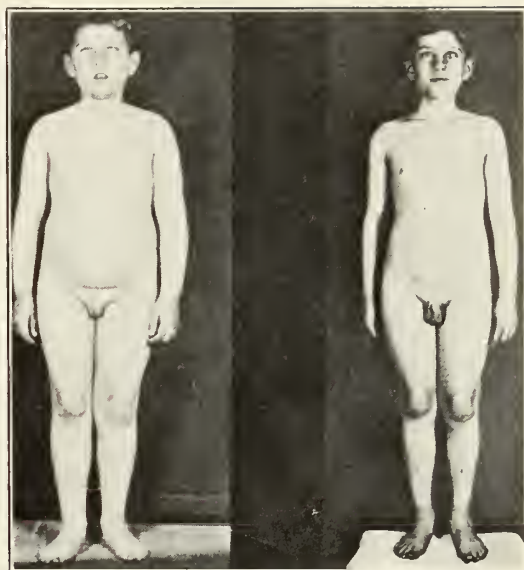


Fig. 8. Infantile and childhood myxedema in boy (right) aged $9\frac{1}{2}$ years, and (left) 18 months later.

been cretinism and had the child been untreated until age $9\frac{1}{2}$ years, as was the case in this instance, he probably would not have responded as beautifully to medication as he did. His defects likely would have been more permanent.

DISCUSSION

The points to emphasize are: First, that the anterior lobe pituitary secretes growth, sex stimulating and thyrotropic hormones all of which affect preadult growth and development either directly or indirectly. Second, onset of gonadal function influences union of the epiphyses with the diaphyses and, third, the thyroid by its secretion of thyroxin largely determines the rate of chemical interchange of all body cells thereby influencing metabolism and growth.

404 Humboldt Building.

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THE ANXIETY STIMULUS AS A FACTOR IN DISEASE

L. H. FUSON, M.D.

ST. JOSEPH, MO.

Anxiety is an emotional state the basis of which is fear. It is a bodily state of activity in response to a harmful stimulus acting in consciousness. This activity is often organ misbehavior and constitutes a symptom of disease. Explanation of organ dysfunction without the organ being the site of anatomical alteration develops by this fact. Situations which produce anxiety I should like to emphasize as an etiological factor for somatic symptoms. They deserve position with new growths, pathogenic organisms and degenerative changes in the production of ill health. I am convinced by my own experience that the anxiety producing stimulus is often the single cause of disease, and that still more frequently it acts in combination with an organic agency to produce illness. I believe its prevalence is not generally recognized in actual practice. The abstract nature of this agency of disease has seemed to exclude it from receiving its due attention. Concrete agencies with anatomical lesions as symptom producers have in the past occupied the chief interest and attention of medical science. So true has this been that the laity is educated to believe that all disease must have an organic basis. The corollary of this is the laity's belief that if no organic lesion exists no disease exists. Some of our fellow physicians seem to hold a similar opinion. By their statements, we are led to think that they believe all somatic symptoms have some organic basis, and by their therapeutic procedures we are likewise to believe that they are organicists unless we doubt their integrity.

The incidence of the pain producing stimulus of fear is as prevalent as its source. Man's chief purpose in life is self-preservation and self-perpetuation. This concerns himself and his environment. He is no longer a unicellular organism with a single tissue performing the many functions of digestion, respiration, circulation, locomotion, excretion and reproduction in a limited and unchanging environment. Instead, he is a complexly constructed organism with specialized groups of highly differentiated tissues, each for the separate performance of these various functions. Above this is a highly complex nervous system for the proper integration of these specially differentiated tissues. This highly developed nervous system with a specialized power of cerebration is constantly

changing man's environment. His problem of adjusting himself to his evolving environment knows no limits of possible magnitudes. Likewise, his chances for maladjustment are great. Situations of maladjustments within himself or in his environment are painful stimuli. Through his enteroceptive and extraceptive sense organs these painful stimuli arouse reflexly reactions in his efferent nervous system. Maladjustments may arise from errors of the individual or from situations in his environment. Sources within oneself for conflicts with environment are apparently increasing in our modern civilization. Good adjustment to environment is defined as the purpose of education. Knowledge, the product of education, sees new situations in the environment in the meaning of past experience. In other words, a new perception received in consciousness takes meaning only in so far as it fits with what one already knows. A lack of experience or knowledge or wrong experience frequently gives rise to conflicts between the old and the new. Evidence seems definitely to indicate that, as a result of such things as our modern machinistic age, education of the masses compares unfavorably with education of the same masses of a century ago. It is cited that formerly the school of living was broader. Today, man's task for living tends to be along highly specialized and narrow channels. For example, he may do nothing but put a nut on a bolt all day long. His work does not require him to exercise thought. He therefore thinks little and poorly and never becomes proficient in good thinking. He knows less and some of the things he thinks he does know are erroneous. In such way one could further elucidate why we have increasing sources for painful reactions between man and his present day environment. Direction of procedure for correction and prevention is self-evident.

Man becomes anxious not alone from present stimuli but he worries about anticipated future painful situations. Most of these stimuli present and future from which he reacts do not in reality and will not exist. However, to him they seem to exist by reason of his faulty knowledge and erroneous thinking. Many are the kinds of painful situations. Few of the more frequent are cancer phobias, heart failure, disagreeable near relative, financial catastrophes, etc. Most important are those anxieties of self-invalidism threatening future destruction. They stimulate emotional reactions of greater magnitude and by their cause tend to exceed others in the time of their duration. Anxiety neurosis, whatever has been its initiating stimulus, often shifts away from it to be per-

petuated by itself. In this way a vicious cycle ensues and the anxiety is self-perpetuated.

The mechanism of body symptoms from fear stimuli apparently is quite foreign to the laity and perhaps vaguely comprehended by many of our fellow practitioners. Familiarity with what is known about the anatomy and physiology of the nervous system, particularly the autonomic component, should tend to clarify the pathological physiology here just as it does in disease of organic basis.

Smooth muscle and glandular tissue of the viscera and elsewhere have an innate power of self-activity but in the normal state they are largely dependent upon their nerve supply for control. Efferent impulses reach them through the autonomies which are wholly motor and secretory in function. These efferent neuron chains begin in the lateral aspect of the anterior columns of certain spinal cord segments and in or near nuclei of certain cranial motor nerves. Those arising from the second dorsal to the fourth lumbar segments are known as the thoracolumbar autonomies. Their peculiar course and distribution are known to innervate practically all smooth muscle and secretory glands found in the body. A second group of autonomic chains arise in and near certain cranial motor nuclei such as the vagi and are distributed to gland and smooth muscles of the head, neck, thorax and much of the upper abdomen. They extend to the ileocecal junction in the small bowel. In action they are antagonistic to those of the thoracolumbar group. In the chest they have an inhibitory effect upon the heart while in the abdomen their effect upon the gastro-intestinal muscle, with exception of the sphincters, is an accelerating one. A third group of autonomies arise in the second, third and fourth sacral segments of the cord and are distributed to the pelvic viscera and the colon. Like the cranial group of autonomies, they oppose the thoracolumbar group. For this reason the sacral and cranial groups are often styled the parasympathetics. In this manner smooth muscle and gland tissue have a dual innervation, one for inhibition and the other for acceleration. These motor neuron chains have no connection with the corticospinal motor tract and therefore are not subject to volition. By direct synaptic relation in the cord with afferent somatic and visceral sensory neurons of the same and other segmental levels, and by indirect relation through long and short associational fibers in the cord, they become the common motor pathway for impulses reaching them from afferent neurons of almost all levels. Most of these afferent-efferent arcs so formed have no representation in consciousness and carry on

in a purely reflex manner. It is through this reflex arc, segmental and intersegmental, that normal function of the viscera is controlled. Normal gastro-intestinal activity, proper blood flow to various tissues, normal glandular function, needed alterations in cardiac activity to meet its demands, are a few of the well known functions of the autonomic nervous system. In like manner the field of the autonomic reflex activity could be extended to almost indefinite limits. These reflexes are unconditioned and if they brook no interference a given stimulus will get a given response. A normal stimulus will bring about normal organ behavior. In this manner food in the gastro-intestinal tract or alterations in the need of blood flow in an organ, bring about suitable activities. Such control activities are everywhere in the body and constitute the greater part of total body activity. So long as these activities meet no interference they go along so smoothly that no record of them is made in consciousness and the individual is free of symptoms.

Harmful stimuli can likewise affect the various receptors of any part of the nervous system. Their impulses enter the cord at their segmental level and may pass over into the motor pathway of the reflex arc at the same or any other level. When a common efferent pathway receives synchronously normal and abnormal impulses competing for the right of way it has been found that the impulses from painful stimuli take precedence. In this way normal intended activity will be replaced by abnormal organ behavior. This is a symptom. This symptom may be felt in the cardiac area, gastric region, or any other region. The painful stimulus may have affected an afferent receptor in this same region or it may have any other location as I have tried to show above. If we are having symptoms from an organic lesion stimulus we most likely will find its location at or near the site of the symptom. The same symptom may, however, have been the result of a painful stimulus from the environment. In such manner anxiety states with abnormal organ behavior result from remotely situated painful stimuli. From this it should be clear that indigestion may result from cancer in the stomach, or a fear of cancer in the stomach.

Not all painful stimuli produce reflex activity. There is a certain amount of resistance located perhaps in the synapse of the reflex pathway. Single weak stimuli fail to get an impulse through, while stronger stimuli are able to pass through. There is also such a phenomenon known as summation in neuron activity. Whereas a single weak stimulus fails to get a weak impulse through, a series of repe-

titions of these weak stimuli may summate an impulse that is able to carry through the reflex arc. A strong stimulus, for example, as a narrowly escaped automobile accident, may at once accelerate heart rate from a normal to a marked tachycardia, while a weaker stimulus, such as an anticipated financial break, may play along intermittently for weeks before a palpitation is recognized. This phenomenon is of great importance in neurosis. In the illustration of the stronger stimulus, the magnitude of the stimulus and the reaction are sufficiently great and synchronous so that the individual himself is actually aware of the fact that he was so stimulated and reacted. In other words, the cause and the effect are sufficiently obvious so that belief in their relationship is unquestioned. However, in case of the weaker stimulus, by reason of its weakness and the duration of the time element between its incipency and the delayed or later body symptom, it is most usual for the patient to recognize only the symptom. He most likely will not recognize the causative stimulus. At this point the patient makes a search for cause almost invariably in the region of his symptom. He knows of nothing but an organic lesion for the cause. This new problem of doubt at once is a new stimulus for anxiety and soon becomes the dominant one. Naturally, if the symptom comes from remote stimulus such as worry his search for an organic local cause will be in vain. Here the vicious cycle grows. The rate of its growth depends largely upon the temperament of the individual. It has been my experience that the patient not knowing or being unable to find his organic lesion assumes an anxiety equal to or often even greater than his dread for the gravest of possible organic lesions that might lurk therein. This situation is well illustrated by cancer phobias, syphilophobia, etc.

The diagnosis of anxiety neurosis is often quite difficult and frequently impossible. Organic stimuli and emotional stimuli may exist synchronously. Here a nicety of judgment is necessary to determine how great a part is played by each factor. The difficulty is no excuse for escaping the diagnostic problem. Mistakes in diagnosis and treatment are no where in medicine so glaring. It is no wonder that the problem is so timidly approached by men of keen diagnostic acumen, and sidestepped by those of less self-reliance. It is probable that this explains in part at least why inadequate attention is given to the sick functional patient. It is easy to shirk responsibility and pass the patient out with the frequently heard statement "you are just nervous," and hand him some bromides. Anxiety neurosis is the most frequent

of the various neuroses and fortunately is the most amenable to relief. Drugs and surgery have little merit in its treatment. From the foregoing it should be clear that the treatment is largely a matter of education. The result will depend upon correctness of diagnosis, the lucidity of the educator, the capacity of the patient to learn and the nature of the anxiety stimulus. The causative stimulus usually does not exist in reality as the patient thinks it does but is so held by reason of his erroneous thinking and false past experience. Here reeducation cures that present illness. Such cures must follow as proof of the correctness of the diagnosis. The frequency of cures, in the experience of critical persons, is the foundation for the belief that the stimulus of anxiety is ranking more and more as a cause for disease.

The relation of the fear stimulus to pure anxiety neurosis is no etiological uncertainty. This, by no means small amount of morbidity in the disease anxiety neurosis, very probably does not represent the total damage produced by the stimulus of fear. The anxiety stimulus likely shares with other painful emotional stimuli to be an important factor in many other clinical disturbances of less obscure etiology. For essential hypertension many causes have been ascribed but as yet we are totally ignorant of its exact cause. There are many students who believe that essential hypertension is without organic basis, and they offer as evidence to support their theory that it is an altered state of the vasomotor autonomies precipitated by emotional stimulation. Whether this is true or not there is more evidence to show that it acts as an aggravation of an already existing hypertension.

Vasospasm diseases such as Reynaud's disease, scleroderma and angioneurotic edema may likewise be related to emotional stimuli. Again, while there is some evidence to suggest this anything like actual proof is lacking. It was thought that Reynaud's disease was due to spasm of the arteriolar and capillary smooth muscle, but the work of Adson in sympathectomy has brought evidence to show that vasospasm is a play of vasomotor autonomies of some unknown central stimulus. It is not impossible for this to be emotional. The mechanism of angioneurotic edema is less clear. The prevalent idea regards it as a local capillary reaction. Sympathectomy for this disease may throw new light upon its nature.

For hyperthyroidism etiology is still unknown and emotional stimuli have been suggested not without some evidence. Some of our neurological friends have even proposed a theory of peptic ulcer on the emotional basis. Megacolon is now being treated surgically by an interfer-

ence in the autonomic reflex arc with some reported benefits. One could go on at length tabulating such possible relationships between clinical syndromes and emotional stimuli. Thus it behooves one in approaching a patient to keep clearly before him the thought that the symptoms are reactions to harmful stimuli that may be of an organic source or, frequently and apparently increasingly, may be a reaction based on a remote stimulus of emotion.

The writer is not a neuropsychiatrist. In fact he pleads an inability to read understandingly the much confused literature on the subject. Experience in approaching clinical problems as they present themselves demands of any practitioner whatever his specialty that he must discern the etiological background if possible; and I believe this will demonstrate very often that the cause is not an organic lesion, and that frequently it can be conclusively shown to be based on a psychogenic source. I would not be so dogmatic as to say that all clinical syndromes can be definitely traced either to organic or to psychogenic etiology. I believe when all diagnostic resources are exhausted there will be a certain group of clinical syndromes, such as the so-called effort syndrome or constitutional inferiority group, that most likely can be classed as cause totally unknown.

320-321 Kirkpatrick Building.

DISSECTING ANEURYSM OF THE AORTA: REPORT OF CASE DIAGNOSED DURING LIFE

Frederick Kellogg, with a pathologic study by Alfred Henry Heald, San Francisco (*Journal A. M. A.*, April 15, 1933), made a correct clinical diagnosis of dissecting aneurysm of the aorta in a case on the day of entry to the hospital. This diagnosis was made because of (1) the sudden onset of pain, which was progressively spreading in character; (2) the evidence of interference with the arterial circulation to the lower part of the body, and (3) the supportive family history of vascular disease and the past history of hypertension. Necropsy revealed a dissecting aneurysm in the medial coat of the entire length of the aorta and the left common iliac artery, in association with a generalized arteriosclerosis and a hypertensive type of left ventricular cardiac hypertrophy. The dissection of the media was facilitated by an extensive obliterative sclerosis of the vasa vasorum, which led to its profound degeneration. The reduction in number of elastic lamellae amounted to about 40 per cent, when directly studied in comparison with the normal aorta of a young adult. It was also found that the degeneration of the media was greater than that in the aortas of five patients who died from other diseases incident on arteriosclerosis. Additional support is given the theory that dissecting aneurysms are the result of an increased separability of the media due to its profound degeneration. This degeneration is not a disease entity but is secondary to arteriosclerosis, which has reached a summit in the nutrient arterioles of the aorta, rather than in the more frequent sites of the heart, brain or kidneys.

POLYNEURITIS OF PREGNANCY

A VITAMIN DEFICIENCY DISORDER

D. T. VANDEL, M.D.

KANSAS CITY, MO.

Many of the pathologic conditions occurring in pregnancy are considered to be manifestations of some toxemia, recovery from which may be obtained by therapeutic abortion. So far none of these hypothetical toxins has been identified. Formerly, the anemias of pregnancy were thought to be the result of some toxic condition but from the evidence of recent investigations they are now considered as arising from a lack of vitamin B, iron and related elements.¹

In this report the patients studied present data favoring the theory that the polyneuritis of pregnancy is a dietary disease and may be effectively treated. The malady is one of the rarer complications² of pregnancy which is associated with persistent vomiting and is recognized as a dietary deficiency disturbance.

Contrary to the pessimistic view held by some observers³ there are facts which indicate the possible relief of the condition. First, the fetus removes many substances from the pregnant organism regardless of the maternal state. Second, severe vomiting nearly always occurs many weeks preceding the onset of polyneuritis. Third, there is a decrease in gastric secretory function⁴ in pregnancy and this may easily influence the course of dietary diseases. Fourth, the pathological and clinical observations in polyneuritis are similar to those found in beriberi.

The following cases have occurred among Italian women. The patients treated at this clinic live under very poor hygienic and dietary conditions and this disease has been observed more frequently during the last three years as a result of a poorly balanced ration directly due to the present economic crisis.

REPORT OF CASES

Case 1. M. R., aged 26, para 1, pregnant 4 months, came to clinic May 14, 1931. When one month pregnant she began to vomit which became increasingly severe. Also complained of paresthesia in the legs and had difficulty in walking. Physical examination revealed an emaciated woman, weight 97 pounds and about 4 months pregnant. Skin was dry, tongue dry and red, lips the seat of a herpes simplex. Fundus of the uterus about 3 cm. above the symphysis pubis and fetal heart tone 150. Paresthesia over whole or lower extremities below the knee. Knee, ankle and plantar jerks abnormal. Hemoglobin 50 per cent, erythrocytes 3,400,000, leukocytes 5500. Stained smears of blood disclosed a moderate achromia with variation in size and shape of erythrocytes. No free hydrochloric acid in stomach. Wassermann negative. Pulse 110, blood pressure 110/50.

From the Italian Clinic.

Patient was hospitalized and treated for first 48 hours by rectal infusions, intravenous glucose and sedatives. After this period she was given a high vitamin diet, including orange juice, raw liver, yeast tablets and two drams of iron and ammonium citrate per day. Amelioration in the general condition was noted about 10 days after initiation of the diet. Improvement continued and patient left the hospital June 20, 1931. At that time she weighed 112 pounds, the paresthesia had disappeared, the pulse was 85, blood pressure 120/70, hemoglobin 70 per cent, erythrocytes 4,100,000, urine normal. Patient was subsequently placed on a high vitamin diet, checked every week, and remained in good condition until August 5, 1931, when vomiting again occurred. During that period blood examination showed erythrocytes 3,800,000, hemoglobin 62 per cent and a moderate achromia. Some paresthesia of lower extremities. The high vitamin diet, including orange juice, raw liver, yeast and iron and ammonium citrate was instituted at home and she made a good recovery by September 5, 1931. On October 12, 1931, patient delivered a full term baby after a labor of ten hours.

This patient suffered from an anemia as well as a polyneuritis of pregnancy which followed a period of vomiting. Improvement in general condition followed when suitable diet was retained. The symptoms returned subsequent to another period of vomiting and again disappeared after the vitamin diet was instituted.

Case 2. L. M., aged 40, para 7, pregnant 6 months. This patient was reported by the visiting nurse of the clinic as being severely ill from vomiting of pregnancy. She was sent to the hospital June 7, 1930, and the following conditions were noted: Patient poorly nourished, pulse 90, blood pressure 120/70, weight 85 pounds. Teeth carious, lips dry, tongue and pharynx covered with upraised plaques from which Vincent organisms were isolated. Paresthesia over the upper and lower extremities, also motor weakness and difficulty in standing. There was a delay in the knee, ankle, biceps and triceps reflexes. Uterine fundus extended as high as the umbilicus and the fetal heart tone was 140.

Blood examination revealed hemoglobin 45 per cent, erythrocytes 3,000,000, leukocytes 12,100. Differential count disclosed polymorphonuclear neutrophils 72 per cent, eosinophiles 1 per cent, lymphocytes 23 per cent, monocytes 4 per cent. Stained smears showed moderate achromia with microcytosis. Urine contained acetone and diacetic acid and granular casts. Gastric analysis showed absence of free hydrochloric acid. Wasserman test negative.

This patient was given rectal infusions, sedatives and intravenous glucose for the first 48 hours until vomiting was under control. The Vincent infection was treated with sodium perborate applications and ultraviolet light. When vomiting had abated the patient was placed on a high vitamin diet including orange juice, raw liver 3 ounces, yeast tablets and iron and ammonium citrate 4 drams per day. In two weeks decided improvement was noted and by the end of the sixth week she had gained 20 pounds in weight. The Vincent infection had entirely disappeared. Urine was normal, hemoglobin 75 per cent, erythrocytes 4,100,000, leukocytes 8000. The differential count, polymorphonuclear neutrophils 70 per cent, lymphocytes 27 per cent, monocytes 3 per cent. Stained blood smear showed normal size and shape of erythrocytes. By the seventh week the patient was able to stand alone and she had good use of arms

and legs although there was some tardiness in the knee and biceps reflexes. On August 3, 1930, the patient went home much improved after a stay of eight weeks in the hospital. She was checked every week at the clinic as to diet and physical condition and her subsequent course was satisfactory. On September 10, 1930, following a five hour labor, she was delivered of a full term living male infant weighing 7¾ pounds. The postpartum period was normal.

COMMENT

In all previous pregnancies the patient had never developed such a condition as here outlined. However, at this time due to the dire poverty of the family and also to the fact that one son was convicted of murder, the narrow physical and emotional equilibrium was upset; vomiting occurred and polyneuritis ensued. On the proper dietary regimen improvement occurred ending in the birth of a full term living male infant.

REPORT OF CASE

Case 3. J. T., aged 24, para 2, pregnant 3 months. Patient came to clinic February 1, 1932, complaining of numbness and tingling in hands and feet accompanied by difficulty in standing. This condition has been present for two weeks and is becoming worse. In July, 1931, she had delivered a full term female infant and in the antepartum period she had a marked secondary anemia which responded to appropriate therapy. Her economic status had become worse during the second pregnancy and on questioning it was found that at times she had been without sustenance and when food was obtained it was of very inferior grade.

Examination revealed a poorly nourished pregnant woman, weighing 90 lbs., blood pressure 100/60, pulse 100. Teeth carious, heart and lungs grossly negative. Uterus enlarged and the fundus about 1 cm. above the symphysis pubis. Urine positive for acetone and diacetic acid. Blood examination revealed hemoglobin 55 per cent, erythrocytes 3,100,000, leukocytes 7200. In the differential count there were polymorphonuclear neutrophils 75 per cent, eosinophiles 1 per cent, lymphocytes 23 per cent, monocytes 2 per cent. Moderate achromia and microcytosis were present. A few megaloblasts were seen in the stained smear. Wassermann negative. The motor power of hands and feet was definitely decreased while there was a weakness in the biceps, triceps, knee, ankle and plantar reflexes. Paresthesia of upper and lower extremities was noted. Gastric analysis showed absence of free hydrochloric acid.

The patient was hospitalized and given a transfusion of 500 c.c. whole blood by the direct method. She was placed on a high vitamin diet, including orange juice, raw liver 3 ounces per day, yeast and mineral tablets 6 per day, and iron and ammonium citrate 2 drams daily. Two weeks after the inception of this therapy the patient began to show improvement. On February 15, 1932, the hemoglobin was 70 per cent, erythrocytes 3,900,000. There was an absence of megaloblasts and improvement in the microcytosis and achromia. Paresthesia of extremities had ameliorated and reflexes were growing stronger. Patient was discharged from hospital March 10, 1932; she weighed 110 lbs., paresthesia of the extremities was absent, motor power was im-

proved and the reflexes were practically normal; hemoglobin 80 per cent, erythrocytes 4,200,000, achromia and microcytosis of the erythrocytes absent. She was observed each week at home and an adequate diet supplied to the patient and the family. On May 10, 1932, the patient weighed 135 lbs., hemoglobin 82 per cent, erythrocytes 4,200,000, leukocytes 7200; urine normal, blood pressure 120/70. August 9, 1932, she was delivered of a full term normal male infant after a labor of five hours. Her subsequent progress was uneventful.

This patient presented a typical case of polyneuritis of pregnancy accompanied by a secondary anemia. Here the condition followed a period of semistarvation and inadequate diet. A contributing factor was probably the quick succession of pregnancies when the patient was already in a poor nutritional state. Improvement was noted in the general physical condition as well as in the nervous system and in the blood when the proper dietary therapy was instituted.

From a study of these patients it is presumable that the polyneuritis of pregnancy is a dietary deficiency disorder and not toxemic in origin. This disease resembles beriberi polyneuritis which results from a lack of vitamin B in the diet. Polyneuritis frequently occurs in pregnant women⁵ living in regions where beriberi is endemic. In localities where beriberi is uncommon the condition may be produced only by the limitation in food consumption and absorption by starvation or hyperemesis. Again, there may be gastro-intestinal factors such as those which occur in pregnancy anemias. Operative interference should be avoided in such cases and a proper diet supplying the needed vitamins should be instituted to meet the deficiency.

CONCLUSIONS

Polyneuritis of pregnancy is similar to beriberi, both of which result from a lack of proper vitamins in the diet.

The correction of the dietary deficiency is obtained by supplying the vitamin B complex.

When pernicious vomiting of pregnancy occurs, vitamin B should be used as a prophylactic.

909 Professional Building.

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OPERATION FOR RETROVERSION OF THE UTERUS AND VARICOSITIES OF THE BROAD LIGAMENTS

ELLERY M. HETHERINGTON, M.D.

KANSAS CITY, MO.

Varicocele of the broad ligament consists of a more or less permanent dilatation of the veins of the pampiniform plexus. No other condition in medicine producing such marked symptoms is so utterly disregarded by many surgeons and gynecologists. Indeed, a careful review of the literature discloses very few important clinical reports. Up to 1905 only thirty-five cases had been reported, and from 1915 to 1921 only six references were found; not because the condition is rarely present, but rather because operators do not attach sufficient importance to the varicosities to give them proper consideration. I am thoroughly convinced that the condition is present in a much larger number of cases than is generally believed and is responsible for many of the symptoms for which pelvic operations such as curettages, suspensions, ovariectomies, etc., are performed, the result being that many of the symptoms remain. This is most embarrassing for the operator, to say nothing of the resentment which the patient feels after being operated upon and not relieved.

Anatomical Considerations.—Emge says:

There are five plexuses of veins in the pelvis with which we are concerned: The vaginal, uterine, and hemorrhoidal plexuses which drain into the inferior hypogastric vein, and the pampiniform plexus which empties through the ovarian veins into the vena cava on the right and the renal vein on the left. In this venous structure there is only one valve and that lies at the end of the right ovarian vein.

Comparing the support of the various venous units, it is at once apparent that the vessels in the base of the broad ligament, that is, the uterine veins, fare the best. The tortuous arteries which enter the parametrium from above pass downward and then gradually ascend until, near the uterus, they rise at almost right angles, are supported very securely by a mass of dense connective tissue, mixed with smooth muscle fibers. The straighter veins hug the artery closely on their way out and derive the full support of the perivascular tissue. Each vessel, or its ramifications, is therefore strongly fortified and guarded against sudden overdistending. An entirely different picture confronts us in the ovarian circulation. There are two plexuses of veins here, one above and one below the hilus of the ovary, which make up the pampiniform plexus. The branches are very tortuous and numerous and lie in a support poor in connective tissue and practically devoid of muscle fibers. Where the pampiniform plexus empties into the ovarian vein, the supporting tissue is even more poorly developed, and for a distance of seven to nine centi-

Read at the 76th Annual Meeting of the Missouri State Medical Association, Kansas City, May 1-4, 1933.

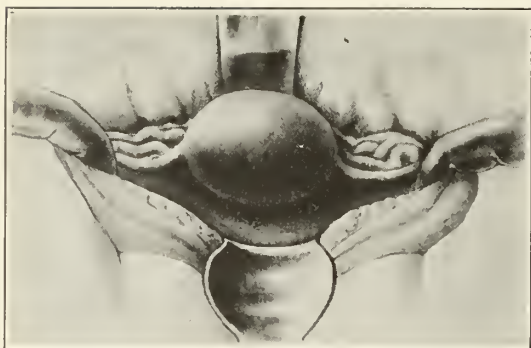


Fig. 1. Varicosities as viewed from above when the uterus is not pulled up by forceps.

meters the ovarian vein swings, so to speak, in a hammock formed by two thin layers of peritoneum only, with very little padding to rest upon. This hammock is securely suspended, at the pelvic brim, at a point where the ovarian vessels cross the iliac vessels. At the other end it is hitched to a movable organ, the uterus. It, therefore, has only one definitely fixed point around which it must swing when the other end varies in position. If the human body stands erect, the ovarian vessels form an inverted parabola in their lower third or pelvic division and then ascend vertically for the other two thirds. The right vein is somewhat guarded against back flow from other sources by the intersecting valve at the vena cava. But the left, which enters the renal vein at right angles, is without a protective valve and therefore open to venous back flow.

Considering the strong support of the veins in the base of the parametrium and the poor safeguard of the ovarian circulation, it is clear that if there arises an interference in the venous flow of the uterine circulation, dilatation of their venous units will be held in check for a long time by the perivascular tissue, but if the same would occur in the ovarian circulation, the venous units soon will have to dilate, since there is no support. This distension takes place first at the lowest end of the inverted parabola of the ovarian vein, because here two antagonistic physical forces meet, the weight of the column of blood rising vertically and the driving force of the increased column of blood coming from the other direction. The weight of the column must by necessity overcome the driving force, because the latter is weakened by the compensatory distension of the venous channels. With progressive distension, the units of the pampini-



Fig. 2. Uterus elevated by forceps. The two anterior incisions are visible.



Fig. 3. Preparation of the anterior flap. Knife in place.

form plexus are gradually affected, until ultimately the uterine and other plexuses of the pelvis are involved also, by virtue of their intimate relation through the anastomotic uterine vein.

In long standing varicose veins of the ovarian and broad ligaments there is a very definite pathology due entirely to passive congestion. The ovaries are very often affected first and undergo cystic and fibrous changes. Later the endometrium becomes edematous and hyperplastic. The cervix may become hypertrophied and still later the fundus may be involved, producing the so-called fibrosis uteri.

Etiological Factors.—The causes of this condition may be divided, for convenience, into (a) predisposing and (b) active causes.

Of the predisposing causes we have, (1) the anatomical peculiarity of the venous system of the pelvis, previously described; (2) the general build of the individual who may be thin and of the typical visceroptotic type, and (3) a condition of poor general health causing a loss of muscular tone generally.

The active causes are, (1) pregnancy. Normally, the veins distend enormously during pregnancy and rarely return to their former condition. (2) Subinvolution of the uterus with pelvic engorgement long after confinement. (3) Retroversions. Any change in the position of the uterus backward or downward must interfere with the venous drainage in the base of the broad ligaments or with the ovarian units. (4) Prolapsus uteri. (5) Tumors of the pelvis. (6) Obstipation, with straining at stool. (7) Prolonged and often repeated sex-



Fig. 4. Method of grasping round ligament preparatory to pulling round and broad ligaments beneath flap.

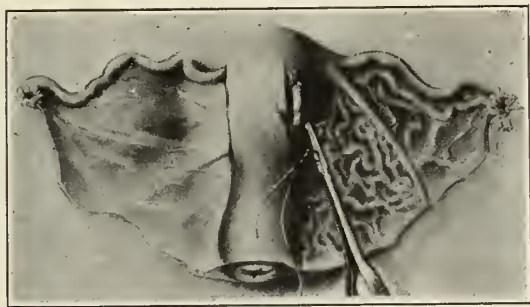


Fig. 5. Method of placing the first two sutures. Note that the edge of the flap is left free. Two intermediate sutures should be added.

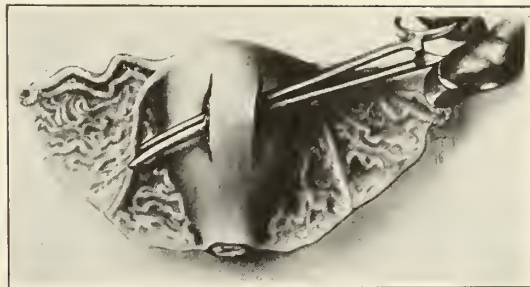


Fig. 6. Same procedure as in figure 5 repeated from the opposite side.

poor muscular tone. (8) Any increase in the intra-abdominal pressure.

Symptoms.—The most prominent symptom is pelvic pain and this must be carefully considered. The patient usually states that beginning from some definite time she has been conscious of a dull, deep aching pain, often burning in character, unilateral or bilateral but most often on the left side, much worse after long standing but quickly relieved by lying down or assuming the knee-chest position. This pain is much worse at the menstrual time or following any condition which tends to produce congestion of the pelvic organs.

These patients usually are habitually constipated, often suffer from nervousness and are usually indisposed and sometimes melancholic. They tire easily upon slight exertion. Back-ache, a common complaint, is usually dull in character and in the region of the sacrum. In cases of long standing the dull heavy pains in the pelvis often run down the inner aspect of the thigh and the legs feel weak. Bladder irritability is often present but is much relieved at night upon lying down.

The menstrual cycle usually changes, the flow in the beginning coming at more frequent intervals or more profusely, due no doubt to the uterine and ovarian stimulation from congestion. Later, as the uterus becomes fibrotic, the flow may become more scanty.

Diagnosis.—A diagnosis in these cases must be made by exclusion. A careful analysis of the history and of the symptoms given above is necessary. These cases are usually distinguished by the bitterness of the complaints and the negativeness of the findings. They deserve our closest attention. Very frequently they have consulted various physicians without relief. Quite a number have been operated upon but because they persist in their complaints are classed as neurotics with imaginary symptoms centering in the pelvis.

The patient upon examination may be the typical visceroptotic type of individual with

poor muscular tone. This should put the physician on his guard. Examination of the abdomen discloses that the pain is low down in one or both lower quadrants; but, strange to say, very little tenderness is elicited, even on deep palpation. No rigidity of the abdomen is present. There is no tenderness over the sacral region in the area of the referred back-ache. Vaginal examination nearly always reveals a uterus in a retroverted position with no masses palpable, but pressure upon the uterus or appendages produces pain. Soreness will also in many cases be elicited on pressure against the lateral pelvic walls.

Some writers claim that by examining patients by rectal or vaginal touch in the recumbent position and then having the patient either stand or drop her legs and raise her upper body, the veins will quickly fill and present a doughy tumor tender under palpation. The writer has not had much success with this method of examination.

A blood examination is important for the reason that it has been normal in over 80 per cent of our cases, thus aiding in excluding inflammatory conditions.

A urinalysis if negative will tend to exclude the possibility of ureteral stone or a cystitis in cases showing bladder irritability.

Of great importance is the fact that wool tampons afford relief in a short time by elevating the uterus and making pressure upon the broad ligaments. This mechanical support pro-



Fig. 7. Completed operation.

duces the same result that an elastic stocking does upon a varicose leg, or a suspension bandage to a varicocele. On removal of the tampon the aching and pains at once begin to return.

I am presenting for your consideration an operation which I have been doing for several years and which I think corrects the pathology better than any in use today. It is an operation devised to correct retroversion, to obliterate some of the varicose veins and to straighten out the other veins of the broad ligaments thus affording an unobstructed return flow of blood from the uterus and at the same time to save the tubes and ovaries if normal. The operation is a plication of the broad and round ligaments into the anterior wall of the uterus which shortens the round ligaments and straightens the broad ligament by taking a fold in it. When completed the uterus will be suspended in its normal position by the round and broad ligaments with a minimum of trauma.

(1) A median incision is made and the intestines are packed back with gauze. The operator can look down upon the uterus and see plainly the varicosities in the veins of the broad ligaments. If the uterus were first grasped by the volsella forceps and drawn up from its bed the varicose veins would be lost sight of by straightening out the broad ligament and the consequent emptying of the veins.

(2) The fundus of the uterus is grasped by volsella forceps and drawn up into the wound exposing the anterior surface. Two incisions are made about three quarters of an inch apart. The upper ends of the incisions begin opposite the insertion of the round ligaments and are carried down the anterior wall of the uterus about two inches, one eighth of an inch deep into the musculature of the uterus.

(3) A flap is raised about an eighth of an inch thick the length of the two incisions.

(4) A long hemostat is passed under the flap and the round ligament grasped far enough from its insertion with the fundus of the uterus so that it can be pulled straight across to the opposite side beneath the flap. This carries the fold of the broad ligament with it.

(5) The round ligament is anchored to the uterus at the outer edge of the incision with No. 2 formalized or chromic catgut using a round curved needle which is inserted about one fourth of an inch from the margin of the incision, dipping well into the uterine wall and bringing it out just under the edge of the flap and through the bend of the round ligament. This suture should be tied. With a hemostat the round ligament is seized at a point below, equal to the length of the incision, and drawn through as above and sutured. One or two

intermediate sutures are taken. In all, there should be three or four interrupted sutures. It should be noted that these sutures are not passed through the edge of the flap.

(6) The forceps are now passed under the flap from the opposite side and the free round ligament with the broad ligament is brought through and over the first suture line and anchored in the same manner as before, except that the interrupted sutures are passed through the broad ligament into the uterine wall emerging through the free edge of the flap. Then, as before, the round and broad ligaments are drawn through at the lower end of the flap and anchored with two or three more interrupted sutures. This will close this side of the wound completely and at the same time anchor the round ligament with its accompanying broad ligament to the anterior wall of the uterus on that side.

(7) A like line of suture is passed through the free edge of the flap on the other side going through both layers of broad ligaments and into the wall of the uterus. Three or four interrupted sutures will close the wound and complete the operation.

By this method the round ligaments and folds of the broad ligaments are shortened and the uterus has been brought up to its normal position. The operation answers a triple purpose; correcting a retroverted uterus, ligating a number of the veins in the pampiniform plexus and straightening the rest of the veins in the broad ligaments.

I wish to thank Dr. W. Merritt Ketcham for his valuable assistance in assembling this paper.

405 Waldheim Building.

DIFFUSE INTRATUBULAR TUBERCULOSIS OF THE HUMAN TESTICLE

Edwin F. Hirsch, Chicago (Journal A. M. A., April 15, 1933), reports a diffuse intratubular form of testicular tuberculosis in a patient, aged 37, in whom histologic examinations were necessary to establish the nature of the disease. The infection probably was diffused throughout the testicular tubules by an obstructive retrograde spread of tuberculous exudates from the vas and the epididymis. No clinical information is available on which to localize the initial genital tuberculosis beyond the vas; that is, in the seminal vesicles or prostate. The patient, however, had noted a bloody mucus in the urine when the enlargement of the testis began. The attempts to demonstrate tuberculosis of the urinary tract subsequent to the right orchidectomy were not successful. Long and others have noted the marked exudative reaction and subsequent tissue changes in the testes of tuberculous guinea-pigs following the testicular injection of small quantities of tuberculin. Presumably, human tissues manifest a similar allergic response. The marked cellular reactions in the testis of the author's patient, accordingly, are the summation of an intratubular tuberculous infection in a sensitized host.

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OCTOBER, 1933

THE PRESENT SITUATION OF THE ENCEPHALITIS EPIDEMIC IN ST. LOUIS COUNTY AND ST. LOUIS CITY

In the editorial columns of last month's JOURNAL mention was made of the presence in and about St. Louis of a severe epidemic of encephalitis. At this writing (September 20), 910 cases have been reported in this vicinity, with a total of 160 deaths, making a general mortality of 17.5 per cent. St. Louis County has reported a total of 482 cases with 77 deaths, and the city 428 cases with 83 deaths. However, during the last week or more, fewer cases have been reported and there appear to be definite indications that the epidemic is on the wane. Older adults continue to be more frequently affected than young persons and the highest mortality is in the older group.

The clinical characteristics of the disease which set this epidemic apart as differing from any previously reported in the United States still persist. The onset is almost always rather abrupt, but the meningeal symptoms may be preceded for several days by fever, prostration, chilly sensations or mild sore throat and general malaise. Then follows an exacerbation of the temperature, with headache and in most cases some degree of stiffness of the neck muscles. Delirium, or more commonly apathy, and more or less stupor, with mental confusion, tremor, difficulty in speech and occasionally transient paralysis of one or more extremities occurs. In contrast to the ordinary lethargic encephalitis, however, double vision and ptosis are of exceptional occurrence. Lumbar puncture reveals a clear fluid with increased cell count, often up to several hundred, with a preponderance of lymphocytes. The febrile period in uncomplicated cases is usually over in a week or ten days during which time improvement in the general condition is progressive. Indeed, recovery is ordinarily surprisingly rapid and complete

so that within two or three weeks after the onset of the illness the patient, except for weakness, is apparently quite normal in every respect. This absence of residuals is again in sharp contrast to the usual course of lethargic encephalitis. Only the further lapse of time will show whether or not this apparent recovery is as complete as it appears to be at present but, judging from the experience in Japan and Australia with apparently similar epidemics of this so-called "Encephalitis B," there is every hope that most of such patients will remain well.

In the meantime, intensive research continues as to the cause and nature of the virus and methods of its spread. The United States Public Health Service and the United States Army Medical School have sent some of their ablest workers, more than a dozen in number, to study the epidemic in cooperation with the local authorities, and even at this comparatively early date progress is indicated. A number of monkeys have apparently been successfully inoculated with the virus and there are indications that transmission from these animals to others of their species has been accomplished. Of course, much work remains to be done before such experimental results can be verified and it will probably be many months or even years before the present investigation is completed.

Sporadic cases of the disease have been reported from various sections of the state. In Kansas City and environs according to the press, 141 cases have been reported to the Kansas City Health Department of which 28 have died.

The scientists from the United States Public Health Service and other Governmental agencies assigned to study the epidemic at St. Louis are: Drs. J. P. Leake, senior surgeon, United States Public Health Service; Charles Armstrong, epidemiologist; L. F. Badger, epidemiologist; J. O. Dean, epidemiologist; W. T. Harrison, laboratory expert; Bruce C. Thielip, epidemiologist; M. V. Veldee, epidemiologist; L. L. Williams, entomologist; W. O. Workman, epidemiologist; Bruce Mayne, entomologist; Virgil H. Cornell, pathologist; James S. Simmons, bacteriologist, and George W. McCoy, epidemiologist; Dr. R. E. Butler, Dr. V. H. Haas, Dr. C. B. Phillips, Dr. C. J. Van Slyke.

STATE DEPARTMENT OF HEALTH INVITES COOPERATION OF THE STATE MEDICAL ASSOCIATION

For a good many years the State Medical Association has offered its services as a cooperative body to the State Board of Health but until now

no specific plan has been devised by which the Board and the Association would be intimately associated in the study of many health problems that confront the board, the medical profession and the people. Ever since the members of the present State Board of Health and the State Health Commissioner were appointed this subject has had very serious consideration and a plan is proposed for the intimate and harmonious cooperation of these two important bodies.

On another page* we publish a letter from Dr. E. T. McGaugh, Health Commissioner, and Dr. E. P. North, President of the State Board of Health, inviting our Association to appoint a committee composed of practitioners to serve as an advisory body to the State Department of Health in analyzing problems of a medical nature.

We welcome this announcement from the Board and the Commissioner and we feel sure that it will be the means of establishing intimate, harmonious and highly beneficial activities.

NEW TUMOR CLINIC AT FULTON

The opening of a tumor clinic at the Fulton State Hospital for the treatment of indigent citizens of the state suffering from cancer and allied diseases should be of great interest to physicians throughout the state. There is hardly a community which is not constantly faced with the problem of the proper treatment of cancer in the indigent. There is no doubt that many early curable cases have failed to be cured through lack of adequate facilities for treatment.

The State Eleemosynary Board took cognizance of this situation and adopted a resolution at its meeting on August 14 to make the radium at Fulton State Hospital available for the treatment of cancer patients among the indigent in the state. The conditions surrounding the use of the radium will be under the direction of Mr. W. E. Jameson, president of the Eleemosynary Board, Dr. M. A. Bliss, St. Louis, a member of the board, and the superintendent and staff of the hospital to see that the operation of the clinic shall not place an undue burden upon the institution.

This resolution was promptly communicated to the Cancer Committee of the State Medical Association which committee, in conjunction with the superintendent and staff of the State Hospital, formulated the plan for the operation of a tumor clinic which has been more or less

accurately described recently in most of the newspapers. Briefly the plan is as follows:

An outpatient tumor clinic has been established at the Fulton State Hospital in the building that houses the roentgen ray equipment, the operating rooms and the specialty examining rooms. The tumor clinic for the examination of new cases was opened September 20, from 2 until 4 p. m., and will be open every Wednesday at these hours. The director of this clinic is, and should be, a member of the Cancer Committee of the Missouri State Medical Association. The director in conjunction with the resident staff of the hospital and the consultant staff of physicians will have charge of the diagnosis and treatment of patients who have cancer or allied diseases. Since the State Hospital was established for the care and treatment of mental diseases only it will be impossible to hospitalize patients suffering from cancer and for the present only ambulatory cases will be accepted for treatment.

Various safeguards have been established to prevent abuse of the clinic and to protect the City of Fulton from an influx of undesirable visitors. Since the clinic is established for the care of indigent patients only and funds are not available for extensive social service work at the clinic itself, a rule providing for the certification of patients by a member of the Missouri State Medical Association and a recognized social agency has been adopted. Patients must be provided with transportation to and from Fulton and if treatment requires them to remain in Fulton sufficient funds must also be available from their own community to provide for residence outside the hospital.

The location of this State Tumor Clinic at Fulton is most fortuitous. Fulton is already the site of State Hospital No. 1 for mental diseases, a state tuberculosis sanatorium (Hadley Hospital) and a state institution for the deaf and dumb (Missouri School for the Deaf). Fulton is located near the geographical center of the state with hard-surfaced roads extending in all directions. It is, therefore, accessible to the greatest number of patients at minimal expense for transportation.

The Barnard Free Skin and Cancer Hospital in St. Louis has been hitherto the only institution in the state with its doors widely open to all indigent cancer sufferers, and its capacity has been so overtaxed that treatment of many hopeful cases has had to be postponed beyond the curable stage simply because of lack of room to care for them. Physicians of the state with diagnostic ability, radium and roentgen ray equipment and the requisite surgical skill have

* Page 422 this issue.

always been willing to give of their time and service to the deserving poor and no doubt have often been imposed upon. Not only will the new Tumor Clinic help to prevent this imposition to a large extent, but it should relieve the general practitioner from the sense of embarrassment he has felt in requesting one of his colleagues to give not only his time but also the use of his expensive equipment free of charge.

There are probably ten thousand cancer sufferers today in Missouri, four thousand of whom may be indigent, and one third of these four thousand should have a reasonable hope of cure if proper treatment were available early. Here is the opportunity for the members of the State Medical Association to become "cancer-minded," to be on the alert to recognize cancer in its early, curable stage in the knowledge that adequate surgical, roentgen ray and radium treatment is available; thus not only will much needless suffering be prevented but also the physician and his community will be economically benefited.

PHYSICIANS AND THE NRA

Because of a statement from General T. H. Hammond, Executive Director, Blue Eagle Division of the NRA, that comments in the editorial columns of *The Journal of the American Medical Association* had given rise to a misunderstanding of the National Recovery Administration's policy toward doctors and dentists, *The Journal* of September 16 presented a comprehensive analysis of the NRA as it affects the medical profession. This statement is presented on another page.* We suggest that every member read this statement carefully as it makes clear in so far as it is possible to do so the relation of the practitioner of medicine to the NRA.

DR. DUDLEY S. CONLEY, NEW DEAN OF UNIVERSITY OF MISSOURI SCHOOL OF MEDICINE

The University of Missouri is to be congratulated upon her new dean of the school of medicine and director of University Hospitals. With the resignation of Dean Edgar Allen in May to accept an appointment at Yale, Dr. Dudley S. Conley was wisely chosen by the Board of Curators of the University to occupy this important position as helmsman for the course that lies ahead of the Missouri University School of Medicine.

Dr. Conley is not only a Missourian but he is a native of Columbia, an alumnus of the Uni-

versity and a staunch supporter of many activities of his alma mater. For fourteen years he has been head of the surgical division of the University Student Health Service and professor of clinical surgery. In 1930 he was appointed professor of surgery and director of the surgical services of the University Hospitals. He now serves as a member on the following University standing committees: University Health, Intercollegiate Athletics, Honorary Degrees and University Policy. He is interested in and a friend of students in all divisions but is particularly well-known to those on the athletic fields where he is often affectionately dubbed "Uncle Dud." While being friendly, he is yet strict in his requirements and demands meticulous care as to details.

Dr. Conley received his degree in medicine from Columbia University, New York City, in 1906, interned at Bellevue Hospital, for six years was a member of the surgical department and one year in the anatomy department of Columbia University. During the years 1917 and 1918 he served as assistant professor in surgical anatomy in the New York Post-Graduate Medical School and Hospital. During the World War he served as captain and major in the Medical Corps and saw service with Base Hospital No. 99 in France.

The new dean of Missouri University School of Medicine is well-known among members of the medical profession of Missouri and in other states. He has given scientific papers before meetings of the State Medical Association, district, county and city medical societies. He served as president of Boone County Medical Society during the year 1925.

In his program for the medical school and other medical activities he deserves and it is needless to say will have the full support of the physicians of Missouri.

A toast to the new dean at the Missouri University School of Medicine—a Missourian, a physician, a practitioner and a teacher in his profession and of his specialty. May it be the fortune of this "skipper" to guide his school to and pilot it through that "New Deal" which has been earnestly sought and planned for lo, these many years.

NEWS NOTES

The Rev. Alphonse M. Schwitalla, S. J., St. Louis, dean of the St. Louis University School of Medicine, was a guest speaker at the annual meeting of the Michigan State Medical Society in Grand Rapids, September 12 to 14.

* Page 421 this issue.

Dr. E. E. Sexton, St. Louis, sailed August 31 for Bremen, Germany. He will spend several months in the urological clinics at Berlin.

The dates for the St. Joseph Session of the Association have been set by the Executive Committee as May 7, 8, 9 and 10, 1934.

Dr. William E. Leighton, St. Louis, was the guest of the Madison County (Illinois) Medical Society at Highland, September 1, and delivered an address on "Spinal Cord Surgery."

Dr. Willard Bartlett, St. Louis, was the guest of the Kentucky State Medical Association at the annual meeting September 11 to 14 at Murray. He delivered an address at a dinner meeting on "A Consideration of Four Eras in Medicine as the Basis for a Prophecy."

Dr. Timothy S. Bourke, Kansas City, was appointed a member of the State Board of Health, August 16, for a term of four years. He succeeds Dr. H. S. Gove, Linn, who resigned to accept the appointment as chief assistant to Dr. E. T. McGaugh, State Health Commissioner.

A grant of \$58,500 has been given Washington University School of Medicine by the Rockefeller Foundation for the study of the physiology of the nervous system. The fund will provide for a five year research program and expand the work in which various departments of the school have been cooperating for several years. Laboratories in the Oscar Johnson Institute for Research will be used.

A "child health recovery conference" has been called by Secretary of Labor Perkins to convene in Washington, D. C., October 6. The conference will be held under the auspices of the Children's Bureau. Data gathered by the Children's Bureau show that twenty-two out of thirty-nine state health officers listed the nutritional needs of children as outstanding above all other depression demands.

The Federal Hospital for Defective Delinquents, Springfield, which will be known as the medical center of the Department of Justice, has been completed at a cost of \$2,500,000. Springfield physicians appointed as local consultants are, Dr. H. A. Lowe, surgery; Dr. G. B. Lemmon, internal medicine; Dr. Paul F. Cole, roentgenology; Dr. W. C. Cheek, ophthalmology and Dr. Robert Vinyard, urology.

Dr. W. J. Bryan, Flat River, was appointed superintendent of the State Sanitarium at Mount Vernon at a meeting of the State Eleemosynary Board in St. Louis September 11. Dr. Bryan succeeds Dr. S. A. Newman who was killed recently in an automobile accident. Dr. Bryan was at one time assistant superintendent of the State Hospital at Fulton and in 1925 was appointed superintendent of the hospital at Mount Vernon, later resigning the position.

The Missouri-Kansas Neuropsychiatric Society will hold its annual session in Kansas City, Mo., October 6, following the session of the Kansas City Southwest Clinical Society conference October 3, 4 and 5. The one day session will include scientific sessions in the morning, afternoon and evening, a round table luncheon at noon and a dinner in the evening. All sessions will be held at the President Hotel. There is no registration fee and all physicians are invited.

The following articles have been accepted for New and Nonofficial Remedies:

- U. S. Standard Products Company
- Antimeningococcic Serum Polyvalent, 30 c.c. vial package
- Diphtheria Toxin-Antitoxin Mixture, 0.1 L, 10 c.c. vial package
- Rabies Vaccine-U. S. S. P. (Semple Method) 7 syringe packages
- Rabies Vaccine-U. S. S. P. (Semple Method) 14 vial packages.

The Association of Assistant Physicians of Missouri met at the State Hospital at Fulton, September 7, with Dr. Scott P. Child, Mount Vernon, president, in the chair. The scientific session was composed of lectures by Dr. Dudley A. Robnett, Columbia, on "Radium Treatment of Skin Cancer"; Dr. J. B. Stokes, Mount Vernon, on "Special Measures in the Treatment of Pulmonary Tuberculosis"; an address by Mr. W. Ed. Jameson, president of the Board of Managers of State Eleemosynary Institutions, and a clinic presented by the medical staff of the Fulton State Hospital.

The eleventh annual conference of the Kansas City Southwest Clinical Society convenes Tuesday, October 3, and continues through the following Wednesday and Thursday. The program is planned as the most intensive, complete and practical one which the Society thus far has attempted. Fifteen guest speakers from the United States, Canada and Europe together with many local physicians will appear on the

program. Speakers will appear continuously throughout the day and evening following the plan of the Interstate Medical Assembly which has proven of great practical benefit for the general practitioner as well as the specialist. The Kansas City Southwest Clinical Society extends a cordial invitation to the profession to attend this eleventh annual fall clinical conference

A second annual clinical conference will be conducted this fall by the Tuberculosis Division of the St. Louis Health Department. A series of clinical demonstrations in the diagnosis of early tuberculosis was presented last fall and was attended by ninety-seven physicians. This fall the demonstrations will be given from October 23 to November 6 and repeated during the interval of November 13 to November 27. The hours will be from 10:00 a. m. to 11:30 a. m. on Mondays and Thursdays. Four sessions will be held at the Isolation Hospital, Tuberculosis Division, and one at Koch Hospital. The course will be practical and free of charge. Physicians wishing to attend the course should communicate with Dr. H. I. Spector by letter addressed to 35 Municipal Courts Building, or by telephone, Main 5560, Station 191. Registration for the course will close October 15.

The fifth sight saving class in St. Louis City and St. Louis County was established with the beginning of school this fall. In 1933 the St. Louis Society for the Blind with the cooperation of the superintendents of twelve school districts in St. Louis County made a survey and found thirty-five children needing the care given in sight conservation classes. A scholarship was given by the Society for a sight saving course in Chicago University and a teacher prepared to instruct the class. The class was opened in the Flynn Park School in University City and is available to any child in St. Louis County needing this care. The sight saving classes in St. Louis owe their inauguration to the hygiene department of the St. Louis public schools and the Missouri Association for the Blind, now the St. Louis Society for the Blind. The National Society for the Prevention of Blindness found that one child in every five hundred needed helpful methods in eye care at school to conserve sight and the methods worked out developed into classes called sight saving classes. The first class in Missouri was established at the Samuel Cupples School in 1923 and in 1926 three similar classes were started at the Rose-Fanning School, now in the

Sigel School, at the St. Alphonsus parochial school and at the Charles Turner School for Negro children. A scholarship for the preparation of a teacher for each sight saving course was given by the St. Louis Society for the Blind.

The following speakers responded to invitations from the Postgraduate Committee of the State Association to deliver addresses at recent meetings of the component county medical societies:

Drs. A. A. Werner and R. A. Kinsella, St. Louis, were guests of the St. Francois-Iron-Madison County Medical Society at Farmington June 29. Dr. Werner spoke on "Sex Hormones" and Dr. Kinsella spoke on "Chronic Rheumatism."

The Dallas-Hickory-Polk County Medical Society had as its guests at Boliver on July 11, Drs. Charles J. Eldridge and Ralph Mueller, Kansas City. Dr. Eldridge spoke on "Diarrheas of Infancy," and Dr. Mueller spoke on "The Treatment of Fractures by the General Practitioner."

On August 31 Drs. Leith Slocumb and P. C. Schnoebelen, St. Louis, were the guests of the Gasconade-Maries-Osage County Medical Society at Owensville. Dr. Slocumb spoke on "Different Methods of Treating Hemorrhoids," and Dr. Schnoebelen spoke on "Diseases of the Colon."

Dr. Dan G. Stine, Columbia, was the guest of the Buchanan County Medical Society at St. Joseph on September 4 and spoke on "Neurasthenia."

The Five County Medical Society had as its guests at Marston on September 7 Drs. Drew Luten and T. C. Hempelmann, St. Louis. Dr. Luten spoke on "Digitalis Therapy, Old and New," and Dr. Hempelmann spoke on "The Encephalitis Epidemic in St. Louis County and St. Louis City."

Drs. Fred B. Kyger and Herbert J. Rinkel, Kansas City, were guests of the Nodaway County Medical Society at Maryville September 8. Dr. Kyger spoke on "The Use of the Sedimentation Test in Pelvic Disease," and Dr. Rinkel spoke on "Allergy."

OBITUARY

WALTER H. FUCHS, M.D.

Dr. Walter H. Fuchs, St. Louis, a graduate of St. Louis University School of Medicine, 1891, died at St. Luke's Hospital August 16 following an operation. He was 64 years old.

Dr. Fuchs practiced in St. Louis during his entire medical career remaining in general practice. He was active in his profession until he became ill three months preceding his death.

He was a loyal member of organized medicine. He served at one time as a member of the St. Louis Board of Health and was a member of the City Plan Commission at the time of his death.

He is survived by his widow, Mrs. Paula Fuchs, a son and a daughter.

WILLIAM F. JUSTICE, M.D.

Dr. William F. Justice, Lancaster, a graduate of the College of Physicians and Surgeons, Keokuk, Iowa, 1874, died June 26, aged 79 years.

Dr. Justice was born in Scott County and attended the public school in Lancaster, Schuyler County. He began his practice in Lancaster and remained there until his death having completed fifty-nine years of practice. He was active in organized medicine until a few years ago. He was well liked by all who knew him and especially by the members of the medical profession.

The following resolutions were adopted by the Schuyler County Medical Society:

Leaves have their time to fall and flowers wither at the North wind's blast but Thou, O Death, hath all seasons for thine own. Once again a brother physician, having completed his work in the healing art and laid away his armamentarium, has been called to his reward; therefore be it

Resolved, That in the death of Dr. Justice the medical profession has lost a useful member and wise counselor, his family a loving and indulgent husband and father, the community an upright citizen, the sick and afflicted a sympathetic and helpful doctor; be it further

Resolved, That we will ever bear in grateful remembrance those truly medical virtues, a square deal to the sick, to which Dr. Justice so tenaciously clung; be it further

Resolved, That a copy of these resolutions be sent to the family of our deceased coworker.

CLYDE WALLACE PARSONS, M.D.

Dr. Clyde W. Parsons, Sweet Springs, a graduate of Washington University School of Medicine, 1917, died of pneumonia at his home May 7, aged 42.

Dr. Parsons received his preliminary education in Sweet Springs and the University of Louisville.

He devoted his life to the practice of medicine in Sweet Springs and that community.

For eighteen months he served as captain in

the Medical Corps of the 110th Sanitary Train under Major-General Leonard Wood at Camp Funston during the World War.

He was ever loyal to the medical profession but was also interested in civic welfare and improvement. He was always planning and working in the interest of the city he loved. He was mayor of Sweet Springs at the time of his death. He will be greatly missed both as physician and citizen.

He is survived by his widow and four children.

BENJAMIN W. TOOTHAKER, M.D.

Dr. Benjamin W. Toothaker, St. Joseph, a graduate of the Kansas City Medical College, 1900, died at the Mayo Clinic, Rochester, Minnesota, August 4, following an operation. He was 58 years old.

Dr. Toothaker was born in Wheaton, Kansas, and received his preliminary education in that community. Following his graduation from the Kansas City Medical College he took postgraduate work in Chicago and New York and then began practice in St. Joseph. He was a member of the faculty of the old Ensworth Medical College.

He was a member of the Buchanan County Medical Society and the State Medical Association and was a fellow of the American Medical Association.

He is survived by his widow, a son, his mother, three sisters and four brothers.

BENEDICT P. WENTKER, M.D.

Dr. B. P. Wentker, St. Charles, a graduate of St. Louis University School of Medicine, 1900, died at St. Joseph's Hospital, St. Charles, from a blood clot in the lung, August 4. He was 59 years old.

Dr. Wentker was born in Henderson, Minnesota. After receiving his degree in medicine he interned for a year at the Alexian Brothers' Hospital, St. Louis, and then began practice in Bridgeton. After a year he moved to St. Charles and had remained in active practice there.

He was an active member of organized medicine. He was for a number of years Councilor of the 8th District and was alternate delegate to the State Sessions in 1920, 1923, 1924 and 1927.

He was a member of the staff of the St. Joseph's Hospital.

He is survived by his widow, Mrs. Theresa Wentker, two sons, two daughters and a brother.

SOCIETY PROCEEDINGS

COUNTY SOCIETY HONOR ROLL FOR 1933

(UNDER THIS HEAD WE LIST SOCIETIES WHICH
HAVE PAID DUES FOR ALL THEIR MEMBERS)

HONOR ROLL

Mercer County Medical Society, December 10, 1932.

Moniteau County Medical Society, January 13, 1933.

Ste. Genevieve County Medical Society, January 19, 1933.

Camden County Medical Society, January 20, 1933.

Dent County Medical Society, February 1, 1933.

Chariton County Medical Society, February 10, 1933.

Webster County Medical Society, July 8, 1933.

Benton County Medical Society, August 1, 1933.

BUCHANAN COUNTY MEDICAL SOCIETY

The regular scientific session of the Buchanan County Medical Society was called to order by the president, Dr. W. H. Minton, St. Joseph, at State Hospital No. 2 at 7:30 p. m., September 6. This was the first meeting of the Society following the vacation interim. Dr. F. M. Grogan and his staff were the hosts.

The first item on the program was a chicken dinner including all the trimmings that usually accompany such affairs. Immediately after the dinner the Society and visitors were conducted to the spacious auditorium of the hospital for a continuance of the program.

The guest speaker of the evening, Dr. Dan G. Stine, professor of medicine at the Missouri University School of Medicine, Columbia, was introduced by the president and delivered an address on "Neurasthenia." Dr. Stine is a splendid speaker and spoke for about forty minutes handling his subject in an able and instructive manner. The address was well received by all present.

After Dr. Stine's address the assistant secretary of the State Association, Mr. E. H. Bartelsmeyer, St. Louis, was introduced by Dr. W. T. Elam and made a short talk on the NRA stressing its significance to the physician.

Dr. E. T. McGaugh, Jefferson City, State Health Commissioner, made a short talk on the differential diagnosis of encephalitis and gave some points on how the general practitioner should handle his cases in order to prevent spread of the disease.

Dr. James P. Leake, Senior Surgeon, United States Public Health Service, told what had been found out about the cause and treatment of encephalitis and answered many questions relative to the proper mode of isolation, quarantine and general management of the disease. Dr. Leake is a man of pleasing personality and his remarks were well received.

This was a great meeting and will long be remembered by the Society from a social as well as a scientific standpoint and all members feel greatly indebted to Dr. Grogan and his staff for the wonderful dinner and entertainment. The Society is also indebted to the guest speakers who gave their time and presence.

EMMETT F. COOK, M.D., Secretary.

CASS COUNTY MEDICAL SOCIETY

The regular quarterly meeting of the Cass County Medical Society was held at the office of Dr. M. P. Overholser, Harrisonville, at 7:30 p. m., September 14, with Dr. H. A. Brierly, Peculiar, president, in the chair.

The Society was honored by the presence of Dr. E. T. McGaugh, Jefferson City, Health Commissioner of Missouri; Dr. W. L. Allee, Eldon, President of the Missouri State Medical Association, and Drs. O. B. Hall and L. J. Schofield, Warrensburg, members of the Johnson County Medical Society.

A thorough discussion of the epidemic of encephalitis which is now prevalent in the state was presented by Dr. E. T. McGaugh.

Dr. L. J. Schofield reported a case of encephalitis and the members and visiting physicians entered into a general discussion of this disease.

A vote of thanks was extended Dr. McGaugh for his valuable contribution to the program.

Dr. B. O. Hartwell, Drexel, read a well prepared paper on "Tularemia" which was discussed.

Dr. G. W. Griffith, Garden City, read a splendid paper on "Spinal Cord Tumors" reporting cases.

Dr. B. B. Tout, Archie, presented a case for examination and diagnosis.

The Society felt highly honored in having Dr. W. L. Allee as a visitor. Dr. Allee added much in the general discussion of the various subjects on the program.

Renewed interest in the Society and attendance at its meeting have been noticeably increasing during the last few months and it was the opinion of those present that this was a very successful meeting.

The following physicians were present: Drs. T. W. Adair and B. B. Tout, Archie; A. H. Baldwin, Pleasant Hill; Wm. Beckman, Strasburg; A. H. Brierly, Peculiar; G. W. Griffith, Garden City; B. O. Hartwell, Drexel; M. P. Overholser, Harrisonville; W. L. Allee, Eldon; E. T. McGaugh, Jefferson City, and O. B. Hall and L. J. Schofield, Warrensburg.

M. P. OVERHOLSER, M.D., Secretary pro tem.

GASCONADE-MARIES-OSAGE COUNTY MEDICAL SOCIETY

The Gasconade-Maries-Osage County Medical Society met at Owensville at the office of Dr. J. J. Ferrell at 2 p. m. August 31.

Dr. L. H. Slocumb, St. Louis, gave an excellent discussion on "Different Methods of Treating Hemorrhoids" illustrated by lantern slides.

Dr. Paul C. Schnobelen, St. Louis, gave an interesting and instructive talk on "Diseases of the Colon," illustrating his complete talk with roentgenographs.

Both addresses were highly interesting to all present.

O. H. JONES, M.D., Secretary.

RANDOLPH-MONROE COUNTY MEDICAL SOCIETY

The Randolph-Monroe County Medical Society met September 12 at the McCormick Hospital, Moberly, at 8 p. m.

Through the courtesy of Dr. J. P. Allen, Cairo, a family of five children four of whom have pseudo-hypertrophic paralysis was presented as a clinic.

Dr. J. H. Ryan, St. Joseph, read a paper on "Diseases of the Thyroid." Dr. W. T. Stacy, St. Joseph, spoke on "Toxemias of Pregnancy"; Dr. W. T. Elam, St. Joseph, read a paper on "Diseases of the Gall-bladder," and Dr. Floyd Spencer, St. Joseph, read a paper entitled "Industrial Surgery."

Mr. E. H. Bartelsmeyer, St. Louis, assistant secretary of the State Medical Association, gave an interesting talk on legislation and the advantages of belonging to the State Medical Association; he also read numerous clippings from the press regarding encephalitis in St. Louis.

Dr. F. L. McCormick, Moberly, reviewed reports given him on two recent visits to the Isolation Hospital in St. Louis where, on the first visit, he viewed fifty-four cases and on the second visit over one hundred. He praised the efforts of the doctors and the courtesy shown him while there.

The party retired to the dining room where a lunch was served. During the lunch Dr. Spencer explained the possible advantages of the radium supply at the State Hospital at Fulton being used for the indigent poor.

Those present at the meeting were: Drs. W. T. Stacy, J. H. Ryan, Floyd Spencer and W. T. Elam, St. Joseph; Drs. O. O. Ash, R. A. Mitchell, H. C. Griffiths, L. E. Huber, M. R. Noland, Jesse Maddox, M. E. Kaiser, O. K. Megee, T. S. Fleming, F. L. McCormick, C. C. Smith, M. E. Leusley, C. H. Dixon, P. C. Davis, L. O. Nickell, Moberly; Drs. C. C. Parmer and J. T. Hickerson, Centralia; Drs. C. A. Barnhart and R. G. Epperly, Huntville; Dr. O. H. Dameron, Keytesville; Dr. R. A. Woods, Clark; Drs. M. C. McMurphy, G. M. Radsdale and H. B. Hunter, Paris, and Mr. E. H. Bartelsmeyer, St. Louis.

F. L. McCORMICK, M.D., Secretary.

WOMAN'S AUXILIARY

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

12th Annual Meeting, Cleveland,
June 11, 12, 13, 14, 15, 1934

President, Mrs. James Blake, Hopkins, Minnesota.

President-Elect, Mrs. Robert W. Tomlinson, Wilmington, Delaware.

WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION

Tenth Annual Meeting, St. Joseph,
May 7, 8, 9, 10, 1934

President, Mrs. Hudson Talbott, St. Louis.

President-Elect, Mrs. Wm. H. Goodson, Liberty.

Advisory Counsel, Dr. J. F. Harrison, Mexico.

NEWS NOTES

The Buchanan County Medical Society and Auxiliary had a dinner together followed by dancing and cards at Greenfield Village August 31. The Buchanan County Auxiliary's president, Mrs. C. H. Werner, has prepared a history of the organization. This was brought up to date to the end of the Auxiliary year for the local and the state scrapbooks.

Mrs. A. B. McGlothlan, St. Joseph, was in Washington, D. C., September 8 and 9 as a member of the President's Committee on Mobilization for Human Needs of which committee Newton D. Baker is chairman. Mrs. McGlothlan returned by way of Chicago for conference with the A. M. A. Advisory Committee of the National Woman's Auxiliary of which Mrs. McGlothlan is the program chairman.

The Lafayette County Auxiliary has elected committee chairmen to take care of the following subjects: Public Relations, Program, *Hygeia*, Essay Contest, Press and Publicity, Legislation, Revisions and Courtesy. Mrs. Hudson Talbott is asking that departmental chairmen be appointed in every auxiliary.

The September meeting of the Cass County Auxiliary at the home of Mrs. M. P. Overholser, Harrisonville, September 14, had a most interesting program following an important business session. The chairmen of program, public relations, *Hygeia* and essay contest committees outlined hoped-for achievements for the year.

Mrs. H. A. Brierly read a fine report of the Milwaukee Session prepared by Mrs. Willard Bartlett. A copy of this report went to every county auxiliary president in Missouri. Every auxiliary member who reads or hears this report will have a better understanding of the nature and value of a national meeting and of the agreeable diversions planned and provided by the hostess auxiliary.

Various procedures are followed in the different auxiliaries for increasing membership. Resourcefulness is shown in the note about the membership committee of the Oklahoma City Medical Society Auxiliary: "The program of our registration committee was made so very attractive that it was no wonder there was a full registration of former members and a goodly number of new members. Fine musical numbers and a one-act play presented by real artists brought a generous attendance to hear and see—and they remained to register."

The Colorado Auxiliary in their philanthropic work the coming year plan to give \$15 for knitting and sewing material for the women prisoners in the state penitentiary; \$25 to the education fund of the Colorado Industrial School for Girls to be used in financing the educational training for deserving girls after they have left the school, and \$25 for additional card tables for the use of women patients in the State Mental Hospital at Pueblo.

The State Program Chairman, Mrs. David S. Long, Harrisonville, has sent out her first letter to the county auxiliaries. The letter contains a list of materials available for auxiliaries including "Proceedings of the National Convention," "Study Envelopes published by the A. M. A. Auxiliary," "Set of *Hygeia* Talks," "Pamphlets Selected from A. M. A. Publications," "Auxiliary Pages in the *A. M. A. Bulletin*," and "Auxiliary Pages in the MISSOURI STATE MEDICAL JOURNAL." In addition to suggestions, the letter contains a study outline on the "Romance of Medicine" which was used by the Oregon State Auxiliary last year.

MISCELLANY

PHYSICIANS AND THE NRA

To the Editor: My attention has been called to editorials which have appeared in the issues of August 12, 19 and 26, of *The Journal of the American Medical Society*, and I regret that there has been a misunderstanding of the National Recovery Administration's policy toward doctors and dentists.

While it is not the intention of the Administration to make it a matter of compulsion to have professional persons place their employees under the provisions of the President's Reemployment Agreement, it is the earnest desire of the Administration that they do so, thus showing their willingness to cooperate with the President's Reemployment Program.

Under the provisions of the Agreement, professional employees of doctors and dentists are excepted from the maximum hour provision of the Agreement while employed in their professional capacity. The term "professional employee" includes interns, technicians and nurses. All nonprofessional employees are intended to be covered by both the wage and hour provisions of the Agreement.

The general rule that the maximum hour limitation shall not apply to employees in establishments employing not more than two persons in towns of less than 2,500 population, which towns are not part of a larger trade area, would, of course, apply to doctors and dentists.

I regret the misunderstanding which has existed to date, and shall greatly appreciate your good offices in placing this correction before your readers.

T. S. HAMMOND, Executive Director,
Blue Eagle Division of the NRA.

In an endeavor to comply with General Hammond's request, the following statement is made for the information and guidance of physicians. It is based on the most recent, accurate information that the Association has as yet been able to obtain:

1. The National Industrial Recovery Act and the President's Reemployment Agreement do not cover legally the practice of medicine. A practitioner of medicine is not within the purview of the act or of the agreement unless his practice is an integral part of a trade or industry. He incurs no legal liability if he refrains from signing the agreement. All this, however, should not prevent any physician from signing the agreement if he desires and if he can do so consistently with the purpose and spirit of the National Industrial Recovery Act.

2. Before signing the President's Reemployment Agreement, a physician should determine whether his doing so and displaying the Blue Eagle may not tend to discriminate against his less prosperous professional associates. The elimination of unfair competition is one of the basic purposes of the National Industrial Recovery Act. The President himself has no authority to approve a code or to enter into an agreement that will eliminate, oppress or discriminate against small enterprises. Certainly, then, no one has the right to utilize the President's Reemployment Agreement as the means for unfairly getting the better of a competitor. The financially successful physician who thinks of signing the agreement should therefore bear in mind that if he displays the Blue Eagle he may seem to be bidding for the patronage of every person who has signed the President's Reemployment Agreement or the Consumer's Agreement,

and that this will include a bid for the patronage of the patients of the less prosperous physicians in the community, who because of financial consideration cannot practice under the terms of the Reemployment Agreement. Every patient who has subscribed to either of the agreements named, it should be borne in mind, is bound by a solemn obligation to patronize physicians who have signed it. A physician who desires to subject himself to the President's Reemployment Agreement may seek the advice of his county medical society before he commits himself. The society can advise him whether the signing of the agreement and the display of the Blue Eagle by one or more physicians in the community will tend to eliminate, oppress and discriminate against others, contrary to the principles of the National Industrial Recovery Act.

3. Every county medical society may well, either with or without a request for advice from some individual physician, determine whether the requirements of the President's Reemployment Agreement are such that every physician in the community can practice under it without undue hardship. If the society finds that that is the case, the forbidden element of unfair competition and the oppression of weak competitors can hardly be said to enter into the situation, and every physician may be left to decide for himself whether he will or will not practice under the agreement. If, on the other hand, the society finds that some physicians because of conditions beyond their control, cannot without undue hardship subject themselves to the requirements of the agreement, the society can then determine whether the agreement is susceptible of modifications that will make it possible for every physician in the community to submit to its terms. If the agreement is susceptible of being so modified, the society can submit to the National Recovery Administration a petition for such modification. The agreement itself recognizes that modifications may be necessary and provides a rather one-sided way for bringing them about in order to avoid hardship in individual cases. There is no reason, however, why by a somewhat similar procedure the agreement should not be modified to meet the needs of the medical profession of a county. If the agreement is so modified, the element of the elimination, oppression, discrimination and unfairness against weaker competitors will have been removed and it may be left for each physician to choose his own course.

4. To avoid future disappointment, it must be recognized that the law does not provide for the punishment of a physician who signs the President's Reemployment Agreement and then cheats. It is understood, however, that the National Recovery Administration has in mind the setting up of machinery whereby persons who have obtained the Blue Eagle and who cheat under it will be held up to public odium through action compelling the surrender of the official insignia. County medical societies that approve the President's Reemployment Agreement in its original or in any modified form may well consider how they can best cooperate with the National Recovery Administration in any efforts that may be made to enforce honest compliance with its terms by all practitioners who sign it, whether members of the society or not.

5. A physician who employs no one can subject himself to the requirements of the President's Reemployment Agreement if he so desires and thus obtain the right to display the Blue Eagle. A physician without employees obligates himself by signing the

agreement to hire in accordance with the terms of the agreement such employees, if any, as he may engage during the life of the agreement; that is, until Dec. 31, 1933. Whether a physician has more than two employees in his service, or has none at all, is immaterial as far as the privilege of signing the agreement and obtaining the Blue Eagle are concerned.

6. Hospitals are not within the purview of the National Industrial Recovery Act or of the President's Reemployment Agreement unless they are integral parts of a trade or industry.—*Journal of the American Medical Association*, September 16, 1933.

CORRESPONDENCE

STATE DEPARTMENT OF HEALTH INVITES COOPERATION OF THE STATE MEDICAL ASSOCIATION

To the Editor: I am informed that you have kindly offered space in THE JOURNAL for health news and health comments from the State Health Department. This is most generous and I am sure will be helpful to both the Department of Health and to physicians.

In the first announcement I feel it logical that the policy of the department should be stated in order that an understanding of our problems might be had and that a closer professional relationship might be reached in our mutual effort to benefit the citizenry of our state.

Reduction in available funds has caused a marked retrenchment in our program but the essential health work will be continued. The personnel retained and employed for scientific work has been selected because of training and experience and without regard for political affiliation. It is just as essential to have specialized training in preventive medicine as it is in any other phase of the healing art. To improve the health program the scientific staff should be encouraged to continue their efforts without interruption at every change in political control. This I believe is an obligation the Commissioner and the members of the Board owe to the people.

It is the desire of the department that every consideration be extended to the physicians of the state. Misunderstandings that have arisen in the past can be prevented in the future if the health program is planned jointly. To cement a closer working arrangement it is recommended that a public health committee composed of medical leaders be appointed by the State Medical Association to aid the Department of Health in analyzing problems which are medical in nature. Definite plans should be perfected suitable to both the physicians and the health organizations before beginning any innovations in health administration or in health procedures.

The Department of Health through its entire organization is urging periodic physical examinations, correction of physical defects in children and immunization done by the family physician. We believe the family physician is the most important factor in the improvement of the public health and urge that he be sympathetic with the entire program in order that advancement can be made in health conservation work.

E. T. McGAUGH, M.D., Health Commissioner,
E. P. NORTH, M.D., Pres. State Board of Health.

BOOK REVIEWS

OPERATIVE SURGERY—Covering the Operative Technic Involved in the Operations of General and Special Surgery. By Warren Stone Bickham, M.D. and Phar.M. (Tulane), M.D. (Columbia), F.A.C.S. Former Surgeon in charge of General Surgery, Manhattan State Hospital, New York; Former Instructor in Operative Surgery, College of Physicians and Surgeons (Columbia University), in the New York Postgraduate Medical School and Hospital, and in the New York Polyclinic Medical School and Hospital, etc., Fellow of the New York Academy of Medicine; and Calvin Mason Smyth, Jr., B.S., M.D., F.A.C.S. Volume VII containing 765 illustrations. Philadelphia and London: W. B. Saunders Company. 1933. Price \$10.00.

Bickham's Operative Surgery, Volume VII, is an encyclopaedia of the latest technical points in general surgery, bringing his excellent system of Operative Surgery, published in six volumes in 1924 up-to-date. It is well written and profusely illustrated. Every surgeon should read it. A general index for Volumes I-VII is included. J. G. M.

THE DUODENUM—Its Structure and Function; Its Diseases and Their Medical and Surgical Treatment. By Edward L. Kellogg, M.D., F.A.C.S., Professor of Surgery and formerly Professor of Gastroenterology, New York Polyclinic Medical School; Attending Surgeon, New York Polyclinic and Gouverneur Hospitals; Visiting Gastro-Intestinal Surgeon, Broad Street Hospital. Foreword by George David Stewart, M.D., F.A.C.S., New York. Chapter on Duodenal Parasites by Bailey K. Ashford, M.D., Sc.D. Section on X-Ray Diagnosis by A. Judson Quimby, M.D. 287 illustrations (3 in color). New York: Paul B. Hoeber, Inc. Price \$10.00.

Dr. Kellogg covers the anatomy, physiology and pathology of the duodenum, together with the medical and surgical treatment. There is a multitude of roentgen ray, pathological, anatomical and surgical pictures and illustrations of surgical procedures. It covers well the duodenum and its allied structures and gives many case reports under each heading, and summarizes end-results. There are well over one hundred pages of references; twenty-one index pages of personal names and a well arranged index of subjects. There is very little written about the duodenum that isn't mentioned in this work. J. G. M.

OFFICE SURGERY. By Fenwick Beekman, M.D., Visiting Surgeon, Bellevue Hospital; Visiting Surgeon, Hospital for the Ruptured and Crippled; Consulting Surgeon, Lincoln Hospital, etc. (One of the Everyday Practice Series, Edited by Harlow Brooks, M.D.) 94 illustrations. Philadelphia and London: J. B. Lippincott Company.

The volume was primarily written for the general practitioner as a reference book and as such it is well prepared and procedures plainly outlined. Remarks on snake bites, tenorrhaphy, "cauliflower ear," wounds and their proper closure, fractures with immediate reduction under anesthesia, infections, tumors of the breast, varicose veins, etc., are covered and show the range of the book.

The reviewer would have included reduction of fractures under local anesthesia as practiced and popularized by Lorenz Böhler of Vienna. Böhler's method certainly should have a place in office procedure, especially in rural communities, and in view of the fact that fractures are considered at some length in this book, and the method of Böhler is becoming more popular, it should have been included.

Special emphasis is placed on the various hand infections also, with diagrammatic illustrations of the various incisions and their proper after-care. To my mind, this chapter is largely gleaned from Kanavel's fine monograph and the work of his associate, Summer Koch.

W. R. H.

THE HISTORY OF DERMATOLOGY. By Wm. Allen Pusey, A.M., M.D., LL.D., Professor of Dermatology Emeritus, University of Illinois; Sometime President of the American Dermatological Association and of the American Medical Association. Illustrated. Springfield, Illinois: Charles C. Thomas. 1933.

In the autumn of life a leader in American medicine, William Allen Pusey, has taken his pen in hand and given us the first American text on the history of dermatology. Through nine chapters he has traced the beginnings of dermatological knowledge from the Egyptian prior to modern times. The story is well written and interesting to the student of medical history as well as to the general reader.

Modern dermatologists may well feel proud of those who have gone before, who struggled without microscopes or laboratory aids to put a complex subject in order. Willan, Bateman, Hebra, Brocq, Huchison, Ehrlich, Duhring and other stars in the firmament of dermatology receive their just share of praise.

An historic index at the end of the book is both novel and useful for reference purposes. N. T.

THE PRACTICAL MEDICINE SERIES. General Medicine. Edited by George H. Weaver, M.D., Lawrason Brown, M.D., George R. Minot, M.D., S.D., Wm. B. Castle, M.D., Wm. D. Stroud, M.D., Ralph C. Brown, M.D. Series 1932. Chicago: The Year Book Publishing, Inc.

The Practical Medicine Series gives its selection of significant contributions during the year to the field of general medicine. Under infectious diseases many new methods of treatment are brought forward, such as plasmochin and atabrin in malaria. The section devoted to diseases of the heart and blood vessels has followed in its arrangement of papers the suggestions outlined in Nomenclature for Cardiac Diagnosis and by so doing has, perhaps unwittingly, illustrated the contention of the authors that an etiologic diagnosis was extremely important to the clinician for there are brought together here several outstanding articles on rheumatic heart disease, giving one the definite impression on reading that successful treatment of a heart condition due to rheumatism waits more on handling the cause elusive as it still remains than on treating the abnormal physiology of the heart itself. The same of course can be said of syphilis, hypertension and thyroid disease which if eradicated would bring about an enormous decline in the occurrence of diseases of the heart.

There are also sections devoted to diseases of the chest, gastro-intestinal tract, blood and metabolism. Reading these gives us the interesting and new, to-

gether with the clinical reliability of the older and tried. The editors have interpolated helpful remarks throughout the book in connection with many of the articles printed. S. L.

INTERNATIONAL CLINICS. A quarterly of illustrated clinical lectures and especially prepared original articles on treatment, medicine, surgery, neurology, paediatrics, obstetrics, gynaecology, orthopaedics, pathology, dermatology, ophthalmology, otology, rhinology, laryngology, hygiene, and other topics of interest. By leading members of the medical profession throughout the world. Edited by Louis Hamman, M.D., Visiting Physician, Johns Hopkins Hospital, Baltimore, Md. Volume I. Forty-Third Series. 1933. Philadelphia: J. B. Lippincott Company.

This volume is a quarterly of clinical lectures and original articles on various branches of medicine, by men who have written extensively in their various fields and are authorities on the subjects under discussion.

Probably the best article is one by Dr. A. L. Bloomfield on "The Use of Special Tests by the Practitioner," which is wisely placed first by the editor. There is an excellent paper by Dr. Dean Lewis on fecal fistulae with case histories and drawings; and a noteworthy article by Dr. A. W. Allen on peripheral arterial diseases. A special section on clinical pathologic conference is well worth reading, especially for some valuable suggestions as to how exercises are conducted to get the most benefit from clinics.

This collection can be highly recommended to physicians in any field because it covers research along many lines. There is an extensive bibliography on recent progress in surgery and medicine which is very commendable. E. E. W.

PROCEDURES IN TUBERCULOSIS CONTROL FOR THE DISPENSARY, HOME AND SANATORIUM. By Benjamin Goldberg, M.D., F.A.C.P., F.A.P.H.A., Associate Professor of Medicine, University of Illinois, etc. With a chapter on Sanatorium Planning by Thomas B. Kidner, New York City, and an introduction by David J. Davis, M.D., Ph.D., Dean of the College of Medicine, University of Illinois, Chicago. Fifty-four illustrations. Philadelphia: F. A. Davis Company. 1933. Price \$4.00.

In the first section the author attempts to evaluate and diagnose the tuberculosis problem and discusses the subject from the racial and legislative viewpoint. He believes the management of the open case is the pivotal consideration of the entire tuberculosis problem and for this reason he devotes many chapters to the various procedures in the control of the open and contact cases. He emphasizes in this connection the role that the dispensary, open air school and preventorium play in the control of the disease.

Section two is devoted to home treatment which he discusses rather fully and the role the sanatorium in the control of tuberculosis is considered in section three. The chapters devoted to the discussion of this subject contain a wealth of useful information on the modern methods employed in the management of sanatorium and in the treatment of the disease.

Dr. Goldberg believes that education is a potent factor in the control of tuberculosis and devotes considerable space to this phase of the subject.

Most of the illustrations are copies of forms used in the Chicago Municipal Tuberculosis Sanatorium and Dispensary.

The book on the whole is indispensable to those interested in the control of tuberculosis and should find a place in the library of every health officer, phthisiologist, social worker and of all others interested in the tuberculosis problem in general. H. I. S.

PRACTICAL OBSTETRICS FOR STUDENTS AND PRACTITIONERS. By P. Brooke Bland, M.D., Professor of Obstetrics, Jefferson Medical College; Chief Obstetrician, Jefferson Medical College Hospital, Philadelphia, Pa. Assisted by Thaddeus L. Montgomery, M.D., Associate in Obstetrics, Jefferson Medical College, Philadelphia. Illustrated with 516 engravings, including 21 colored plates. Philadelphia: F. A. Davis Company. 1932.

According to the preface, this book was prepared for "students in their clinical and laboratory work." Dr. Bland maintains a very high standard of literary excellence and no flagrant errors in proof reading are observed.

The text includes some problems rarely discussed in obstetrical literature. The subject of obstetrical jurisprudence is treated in a very enlightening and practical manner that should interest specialists in that field. He disagrees with some internationally known pathologists in stating that "when maternal syphilis is present the placenta will reveal characteristic lesions of syphilis." Quoting further: "In this pathological condition the placenta is larger in proportion to the size of the fetus; it presents a greasy appearing surface on which the cotyledons are poorly defined and the connective tissue which surrounds the blood vessels is oftentimes increased in density and thickness." He states that spirochetes are rarely found in placenta tissue.

The book is liberally illustrated with photographs, colored reproductions and schematic drawings. Just preceding the index is appended a compilation of pertinent literature which is well chosen for referred reading.

The book is too comprehensive for a student's compend and not sufficiently encyclopedic for a reference book. Nevertheless the book would be a valuable addition to any doctor's library. M. A. H.

DISEASES OF THE EYE. By Hofrat Ernst Fuchs, Former Professor of Ophthalmology, University of Vienna. Fifteenth German edition of the *Lehbuch der Augenheilkunde* as revised by Maximilian Salzmann, Professor of Ophthalmology, University of Graz, Austria. Authorized translation by E. V. L. Brown, M.D., Professor of Ophthalmology, University of Chicago. Tenth English edition. 255 illustrations in the text and 41 colored figures. Philadelphia: J. B. Lippincott Company. 1933.

We again welcome the latest translation of Hofrat Fuchs' textbook and, although there have been some changes, we are glad to find that the latest "Fuchs'" is still the "Fuchs'" we have previously known.

The current edition, "Fuchs' Diseases of the Eye, Brown," differs from "Fuchs' Textbook of Ophthalmology, Duane," chiefly in the omission of the chapters on refraction and operations, and thus is less bulky. The chapter on muscles by Duane has been curtailed but we are glad that the chapter may still be attributed to Alexander Duane for the association of Fuchs' textbook and Duane has become traditional and no one disputes the authority of Duane in this field. The chapters relating to the anterior portion of the eye reflect our increased knowledge of these

structures as a consequence of the development of the slit lamp and the corneal microscope. The selection and arrangement of the colored plates of the fundus oculi are excellent.

In this translation Dr. Brown has retained the readability which characterized the translations by Duane and he is to be congratulated for having so ably continued so excellent a work. V. L. J.

THE PELVIS IN OBSTETRICS. A practical manual of pelvimetry and cephalometry including chapters on roentgenological measurement. By Julius Jarcho, M.D., F.A.C.S., consulting gynecologist, Sydenham Hospital. 140 illustrations, 51 tables. New York: Paul B. Hoeber, Inc. Price \$6.00.

This book is a careful compilation of the history and present day knowledge of the normal and abnormal female pelvis, with beautiful and clear illustrations. The chapters on roentgen ray pelvimetry and cephalometry are new and to the point and should be read by every obstetrician and roentgenologist.

The absolute confidence that the author has in the accuracy of his roentgenogram is rather startling and hardly in keeping with the ideas that generally prevail. W. C. G.

FOOD IN HEALTH AND DISEASE. Preparation, Physiological Action and Therapeutic Value. By Katherine Mitchell Thoma, B.A., Director of Dietetics, Michael Reese Hospital, Chicago. Philadelphia: F. A. Davis Company. 1933. Price \$2.75.

In the maze of special diet theories which are being exploited today it is refreshing to read in the preface to this able discussion of food, "There are certain unchanging laws of nutrition, certain requirements that must be supplied to the body by the food. These essentials are included in every normal adequate diet and must also be supplied by any therapeutic diet on which a patient is expected to live for any extended period. In therapeutic diets our interest may be directed to some specific nutrient—in diabetes our attention is focused on the metabolism of glucose—but the diet will not be permanently successful if in planning it we ignore any of the essential nutrients. Therapeutic diets cannot be thought of as separate entities. They are a part of the whole picture of nutrition. A therapeutic diet is simply the normal diet modified to meet special conditions existing with certain diseases."

The first part of the book presents the ultimate constituents of the diet, the purpose served in the animal economy by those constituents, and the optimum intake of each which should be provided. The second part of the book takes up the special diet employed in a host of diseases ranging from allergy to typhoid fever; it insists upon the essential similarity between these diets and the normal. Mrs. Thoma describes the preparation of special diets in the main diet kitchen at the Michael Reese Hospital where she is the director of dietetics. The special diet kitchen is employed only for the preparation of diabetic diets. The third and fourth portions of the volume detail a series of laboratory exercises for nurses; however, the recipes given may easily be applied by the physician to the needs of his patient. The book contains the usual food charts, numerous food arrangements suitable for the special diets to be employed, and minute directions for cooking.

It may be hoped that the authors of articles on diet, particularly those which are to be read by the

layman, will bear in mind that, "An adequate diet is a diet which is made up of foods which furnish the individual with sufficient amounts of each of the essential nutrients."

B. Y. G.

ASTHMA, HAY-FEVER AND RELATED DISORDERS. A Guide for Patients. By Samuel M. Feinberg, M.D., F.A.C.P., Assistant Professor of Medicine and Attending Physician in Asthma and Hay-Fever Clinic, Northwestern University Medical School, etc. Illustrated. Philadelphia: Lea & Febiger. 1933. Price \$1.50.

This small monograph is written for the patient but does not give any detailed instructions which might lead to self-diagnosis. It is written in conversational style, but unfortunately too often in a manner too personal to be in good taste. It attempts to clarify the different procedures necessary to make a diagnosis in an allergic individual by an explanation of some of the fundamental processes involved. In addition to asthma and hay-fever, paragraphs are devoted to hyperesthetic rhinitis, eczema, urticaria, abdominal allergy, migraine, headache, and some miscellaneous disorders. There is a chapter, valuable alike to patient and physician, which details the wheat containing foods, egg containing foods, and milk containing foods and the occurrence of other foods; for example, buckwheat, potato, mustard and onion, in states other than the readily recognized one. This chapter also contains information on the sources of contact for the common epidermals and other inhalant allergens. There are instructions on the preparation of dust free rooms and the self-administration of adrenalin.

E. H. E.

LIGHT THERAPY. By Frank Hammond Krusen, M.D., Director of the Department of Physical Medicine, Temple University School of Medicine, Philadelphia. Foreword by John A. Kolmer, M.D., Dr.P.H., D.Sc., LL.D., Professor of Medicine, Temple University School of Medicine. Thirty-three illustrations. New York: Paul B. Hoeber, Inc. 1933. Price \$3.50.

This book on light therapy is greatly needed.

The author has attempted to unravel the chaos in the use of the various types of therapeutic lights. Much has been written on light therapy, but the author has organized the subject in an easily readable and understanding manner. He has classified the various types of rays and has accentuated the general need for a more accurate selection of therapeutic rays according to their wave lengths and the physiological responses. The subject has been approached from a scientific viewpoint obviously in a timely attempt to supplant the old haphazard method of treating patients with "lights" regardless of the need or indication for such treatment. He cites the indications for light therapy and enumerates the effects in various diseases, contrasting the advantages and disadvantages of variation in modes of application. Contraindications, limitations and sources of error are discussed. The chapters on these phases alone make this book worth while, particularly for those practitioners who have been recommending light therapy in "an absurdly large number of conditions."

Any physician will find his time well spent in reading this book. It is only through such work that we will ultimately arrive at a correct use and evaluation of light therapy.

C. E. V.

NEW AND NONOFFICIAL REMEDIES, 1933, containing descriptions of articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1933. Cloth. Price, postpaid, \$1.50. Pp. 498; Ivi Chicago: American Medical Association.

The annual editions of this volume contain all that the busy physician needs to know concerning the newer preparations which he is daily importuned by the detail men of the pharmaceutical manufacturers to use. The remedies listed and described here have been examined and found acceptable by the Council on Pharmacy and Chemistry, the deliberative body charged by the American Medical Association with the performance of this service for the practitioner, who has not the time or means to make the determinations for himself. Among the new preparations admitted during the last year are: Trichlorethylene-Calco, an inhalation anesthetic proposed especially for use in trigeminal neuralgia; Nostal, an additional barbituric acid compound; Decholin and Decholin Sodium, bile salt preparations for use in functional insufficiency of the liver, the sodium salt being suitable for intravenous use when necessary; Biliposol, Bismo-Cymol, and Iodobismitol, bismuth compounds for use in obtaining the systemic effects of bismuth, especially in syphilis; Triphal, a gold salt proposed for use in the treatment of lupus erythematosus; a number of improved liver preparations for use in the treatment of pernicious anemia; two halibut liver oil preparations of high vitamin A and vitamin D content; and Pentnucleotide, the sodium salts of the pentose nucleotides derived from the ribonucleic acid of yeast, proposed for use in infectious conditions accompanied by a leukopenia or neutropenia.

The book contains general articles, descriptive of the classification under which the various drugs are listed. According to the preface, more or less thorough-going revisions have been made of the articles: Arsenic Compounds; Dyes, Iodin Compounds; Liver and Stomach Preparations; Radium and Radium Salts and Silver Preparations.

ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR 1932. Cloth. Price \$1.00. Pp. 104. Chicago: American Medical Association.

The Council on Pharmacy and Chemistry still carries on its work of informing the medical profession concerning the new medicinal products brought out by the various manufacturers of pharmaceuticals. This volume contains the reports on products considered and rejected by the Council during the past year. Among the reports of special interest are: Amertan, an unoriginal mixture of tannic acid and merthiolate in a water soluble jelly, marketed under a proprietary, uninforming name; Antiopin, a mixture of indefinite composition offered under a nondescriptive, therapeutically suggestive name and marketed in a way that may foster the drug habit; Eubetin, another insulin substitute for oral administration marketed under a proprietary uninforming name with unwarranted claims; Ferro-Copral, a mixture of saccharinated ferric oxide, manganese citrate and copper proteinate proposed for use in the treatment of pernicious anemia and marketed under a proprietary name with unwarranted therapeutic claims; Hepatex P.A.F., a liver preparation proposed for intravenous use and marketed under a proprietary and insufficiently descriptive name with no satisfactory evidence of the safety of its recommended intravenous use; Bi-So-

Dol, an unscientific "alkalinizing" mixture offered under an uninforming proprietary name with exaggerated and unwarranted claims of therapeutic usefulness; Gan-Aiden, consisting mainly of the well known ethyl amino-benzoate (benzocaine), a preparation of undeclared composition marketed under a noninforming, proprietary name; Myodin, Subidin, and Sanguiodin, unscientific preparations of iodine marketed with unwarranted claims and indefinite, incorrect statements of composition, under proprietary uninforming names and Tonikum-Roche (Now Elixir Arsylen Compositum-Roche), a "shot-gun" proprietary "tonic" marketed with misleading therapeutic claims.

Besides the reports on rejected articles, the volume contains "Preliminary" and "Special" reports of exceptional timeliness and value: The preliminary report on Thorotrast, a colloidal thorium dioxide preparation proposed for use in retrograde pyelography and for roentgen visualization of the liver and spleen by intravenous administration, is an excellent example of this class of reports. The articles on Nirvanol and Triethanolamine are also interesting and effective preliminary reports. Among the "special" reports those on Sulpharsphenamine and Mercurochrome are outstanding. Each report definitively clears up the present status of the drug concerned, the former, on the basis of a questionnaire circulated among leading syphilologists, and the latter on the basis of independent bacteriologic investigation, done by consultants of the Council.

THE CULTURE OF THE ABDOMEN. The Cure of Obesity and Constipation. By F. A. Hornibrook. Preface by Sir William Arbuthnot Lane, Bart., C.B., M.S., Consulting Surgeon to Guy's Hospital, etc. Seventh edition. New York: Doubleday, Doran & Company, Inc. 1932. Price \$2.00.

The author's purpose is to describe a system of exercise which will cultivate those organs of the body most commonly neglected in our civilized state, viz., the organs of digestion and secretion and the abdominal muscles which support them. As a corollary to this he has given attention to posture, which he regards as the predominant feature of any successful system of exercises. He devotes a short chapter to the sewage system of the body, mentioning catharsis, over-eating and physical indolence as the chief causes of constipation.

The author has obtained his basic ideas of exercise from the native dances of the New Zealand Maori, finding that their dances furnish (1) vibration, having for its object loosening of the body; (2) breathing exercises which insure a supply of oxygen to the tissues; (3) body movements centered about the abdomen which exercise a stimulating effect on the viscera thereby promoting bowel action; (4) vibration to insure relaxation of the recently active muscles and to promote rest. These dances he contrasts with the popular systems of physical culture used the world over, in which we develop the limbs to the exclusion of the abdominal muscles. His system, then, is a system of abdominal muscle training.

Chapters are devoted to posture, entropoptosis, thinness, lung culture, daytime drowsiness, flatfoot, exercise after operation, golf, abdominal control, and eating and evacuation.

Briefly summarized, his rules for exercise are as follows: Exercise should be taken before the bath; it should not be taken within two hours after a meal; it should be taken in fresh air; the clothing should

be loose; it should not be taken when fatigued, and it should be taken twice daily by constipated individuals. All the exercises can be completed in a period of about ten minutes.

Six different exercises, all very simple and all quite mild and applicable to most any patient whatever his physical condition, are given for development of the abdominal muscles. Combined with these are exercises for the hips, breathing exercises, pelvis tilting, etc.

The author's system impresses one with its departure from the American idea of physical culture as applied to the health of the individual. There is scarcely any patient who cannot safely use this system of exercise to great advantage, a comment we can scarcely make as to our own system. This book is worth the careful perusal of any physician who has the welfare of that vast army of the constipated middle-aged patients at heart.

G. H. T.

INFANTS AND CHILDREN. Their Feeding and Growth.

By Frederic H. Bartlett, M.D., Director of the Department of Pediatrics, Fifth Avenue Hospital, New York City. New York: Farrar & Rinehart, Inc. 1933. Price \$1.50.

The purpose of this book is to teach parents modern methods of the care of infants and children. It is written in plain popular language readily understood by any parent having at least a common school education.

While the reviewer cannot agree with all his directions on infant feeding the emphasis of modified cow's milk to the exclusion of some of the popular foods used at present is commendable. The directions of the care and training of children is strictly up to date. The book may be safely recommended to young parents.

J. Z.

NOUVEAU TRAITÉ DE MÉDECINE. Fascicule XVII, Pathologie de Reins. Par Fernand Vidal, A. Lémierre et Pasteur Valléry-Radot (et al.). Board, 1024 pp. Masson Et Cie, Paris. 1929. Price 125 Franks.

Volume XVII of the Nouveau Traité de Médecine treats of diseases of the kidney by Vidal, Lémierre and Pasteur Valléry-Radot, and of hemoglobinuria by Vidal and Abrami. In many respects it is the outstanding volume of the entire series and represents a very high level of achievement. The volume has an additional interest as the last work from the pen of the gifted clinician and investigator Fernand Vidal whose death occurred while the book was in press. Medicine is particularly fortunate in having this legacy from the pen of the French Master, who contributed so much of lasting value to the subject of renal disease.

This volume contains more than one thousand pages and within its covers one finds a very full discussion of the anatomy and physiology of the kidneys, the pathology, symptomatology and therapy of nephritis, tuberculosis, amyloidosis, lithiasis, neoplasms of the kidney as well as abnormalities of the urine. While the pathological anatomy of the kidneys is by no means neglected, it is primarily questions of pathological physiology which apparently interest the authors most. The physician who reads French will find it a mine of information written with that clarity so characteristic of the French. The reviewer was so impressed with this work that he immediately ordered a copy for his own library and has found it a most valuable work of reference.

R. H. M.

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E. J. GOODWIN, M.D., Editor
1023 Missouri Building, St. Louis, Mo.
Telephone, Jefferson 5261.

PUBLICATION } J. C. B. DAVIS, M.D., Chairman
COMMITTEE } G. WILSE ROBINSON, M.D.
M. A. BLISS, M.D.

ARTERIOSCLEROSIS OF THE LOWER EXTREMITIES WITH SPECIAL REFERENCE TO TREATMENT IN DIABETIC GANGRENE

W. H. OLMSTED, M.D.

AND

I. Y. OLCHE, M.D.

ST. LOUIS

The material for this study consisted of the amputated limbs of patients suffering from arteriosclerotic gangrene. The majority were diabetics and a few were cases of senile arteriosclerosis. The femoral arteries in these specimens were isolated, cannula introduced and a suspension of barium sulphate was introduced through a syringe. As you know, the technic of amputation prescribes that the leg be elevated and bandaged to drain as much blood as possible from it before the tourniquet is applied. Thus, the vessels are empty and ready for injection. The suspension of barium was 50 per cent. This makes a thick soup like substance which on shaking in a flask gives a metallic clink similar to that heard on precipitating blood with tungstic acid. The normal leg will hold about 50 c.c.

of this suspension. The consistency of this suspension is such that it will not enter the capillaries but the arterioles are well injected. Arteriosclerosis cuts down the volume of barium that may be injected and instead of the normal 50 c.c. one can only inject between 5 and 30 c.c. We wished to study the arterial tree and did not want to obscure the picture by capillary injections. After injection the femoral artery was tied and the limb taken to the roentgen ray laboratory where stereoroentgenographs were made. The stereoscopic picture gives a beautiful demonstration in three dimensions of the arterio-vascular tree.

Table 1. Gross Lesions of Femoral and Popliteal Arteries in Diabetic Gangrene

Femoral: Outline smooth, normal size.....	14
Outline definitely irregular.....	21
Popliteal: Complete occlusion	10
Partial occlusion	4
Marked irregularity of lumen....	16
	30 71%

Table 2. Gross Lesions of Branches of Popliteal Artery, Posterior Tibial, Peroneal, Anterior Tibial (30 Cases Popliteal Occlusion Omitted)

All three branches marked by disease or occluded	19 (63%)
One good vessel reaching foot.....	7
Normal blood supply to foot.....	4

Table 3. Gross Lesions of Small Vessels of Leg

Normal vessels	11
Vessels fine and tortuous.....	11 (33%)
Large, tortuous vessels forming anastomosis.....	9

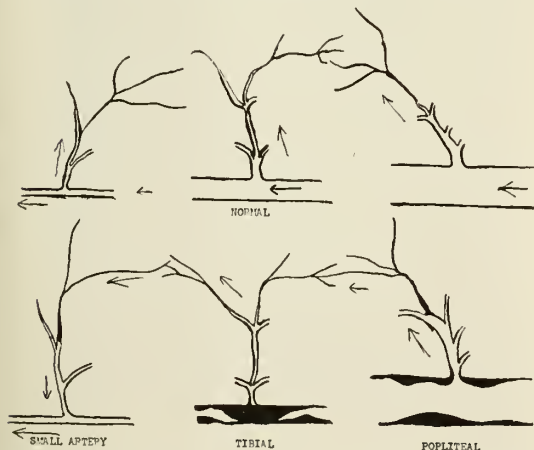


Fig. 1. Changes in circulation in obstruction of one large branch of the popliteal. Note reversal of normal direction of circulation in small artery.

Read at the 76th Annual Meeting of the Missouri State Medical Association, Kansas City, May 1-4, 1933.

This paper is a study of the arterial tree as shown by roentgen ray in forty-two amputated limbs. Of these cases we have accurate clinical records of twenty-six operated upon in Barnes Hospital. In these cases we have records of the pulsations in the arteries and the clinical data regarding the extent and severity of infection so that the cases can be divided into those in which infection predominated and those in which the picture was mainly that of dry gangrene.

The lessons gained from the study of the specimens are: (1) Vascular disease, as we see it by the aid of these injections, has existed in the patient for a considerable period of time, in

most instances the individual being unaware of its presence; (2) in many instances we have seen small vessels develop in such a way that they take the place of the normal large branches of the popliteal; (3) the arteriosclerosis in large arteries can be demonstrated in 69 per cent of the cases while it is present in the small vessels in but 33 per cent. This means that even when there is extensive disease of the branches of the popliteal with occlusion of all of them, circulation of a sort can be reestablished, providing the arteriosclerosis has not involved the femoral artery or the arterioles too extensively.

The study of these specimens seems to indicate that as one large branch after another of the popliteal becomes occluded, and as this occlusion takes place, small vessels form an anastomotic network through which the circulation of the blood may gain access to the foot, often in considerable amounts. One gets the impression that if the small vessels develop enough the blood supply will be sufficient to maintain life in the extremity and it seems probable that these by-paths of circulation will be sufficient in proportion to the amount of work the extremity is called upon to do. It seems entirely possible that with rest the circulation even impaired as it is will be able to take care of the reduced metabolism.



Fig. 2. Large number of small arteries may take the place of the posterior tibial. Condition of popliteal and femoral good. Large branches of popliteal diseased and obstructed.

After gangrene has developed the condition of the patient is desperate. There can be no doubt that the most important period for therapy is the time preceding the onset of gangrene. It is quite obvious that every diabetic should have his legs examined at regular intervals to determine whether or not the circulation has been damaged. This is particularly true because symptoms of arteriosclerosis of the extremities are so frequently absent. Every diabetic should also be impressed with the importance of consulting his physician for the most trivial infections or injuries of his legs or feet.

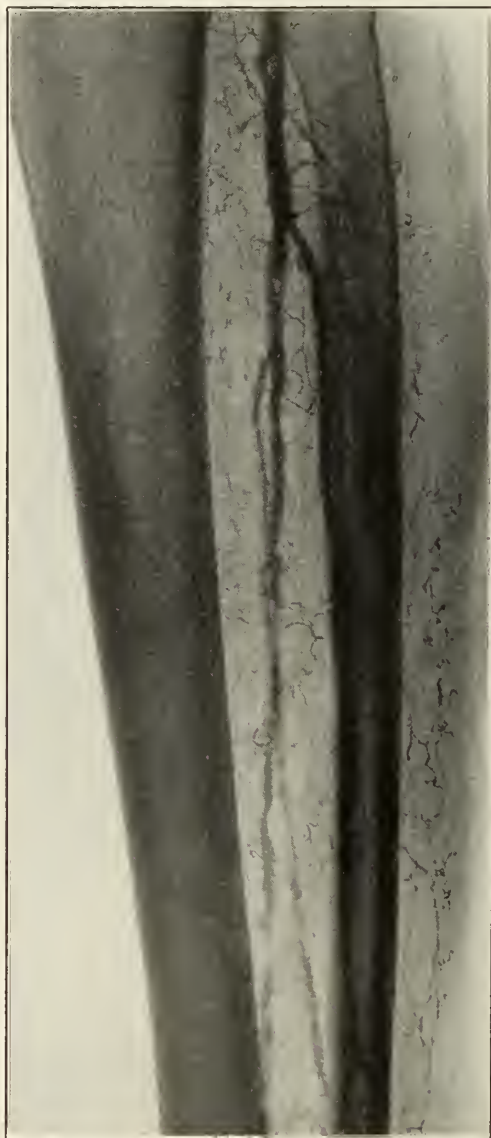


Fig. 3. Extensive disease of all branches of popliteal with no anastomotic circulation developing. Small arteries very tortuous, fine and few in number. Patient had dry gangrene of the toes.

CLINICAL METHODS FOR DETERMINING CIRCULATORY DISEASE

The most important method for determining the state of circulation of the lower extremities is the palpation of the popliteal, dorsalis pedis and posterior tibial artery pulsations. It is hardly necessary to discuss the palpation of the first two. However, in fat people the popliteal is sometimes difficult to feel but with the leg in the horizontal position and relaxed, and with one hand to palpate and the other hand to exert pressure, the palpation even in the obese is not difficult. The dorsalis pedis varies a great deal in its position on the dorsum of the foot so great care must be given in going over the whole top of the foot in order to be sure that it is absent. The posterior tibial pulsation is not ordinarily taken note of by many physicians. Nevertheless, it is quite as important as the dorsalis pedis, is just as constant in its anatomical relationships and is of equal importance in the circulation of the foot. One palpates it just below the internal malleolus of the tibia. In normal people it is as constant as the radial pulse. The disappearance of either the dorsalis pedis or posterior tibial pulsations is of extreme importance and is usually the first sign of disease. As one examines diabetics from time to

time these pulsations should always be felt and the volume noted on the histories. If that be done one will not fail to appreciate the importance of the disappearance of a pulsation which previously has been repeatedly felt.

Table 4. *Clinical Study of Pulsations Noted in Extremities (26 Barnes Hospital Cases)*

Artery	Not Recorded	Absent	Present
Popliteal artery	4	6	16 (70%)
Dorsalis pedis artery.....	5	17 (80%)	4
Posterior tibial artery	7	13 (68%)	6

The second sign of importance is what we call elevation pallor; i. e. as the foot is held in the vertical position, the flesh color of the foot disappears and the skin assumes a parchment yellow color which is deathlike. This is due to the large vessels having been so cut down in caliber that the force of the heart beat is not sufficient to equal the force of gravity so that when the foot is elevated the blood drains from the limb.

The third sign is atrophy. Atrophy of the skin and subcutaneous tissue appears as the circulation becomes extensively impaired. The subcutaneous tissue seems to disappear, the skin becomes thin, glassy, inelastic and tightly stretched over the bones. It is often almost



Fig. 4. Occlusion of the popliteal artery. Man of 74, diabetic. Extensive disease of the popliteal with complete obliteration at bifurcation breaking up into a network of small arteries which supply all the circulation for the leg.



Fig. 5. Occlusion of the large branches of popliteal. Popliteal and femoral in good condition. Extensive disease of both tibials. Extensive anastomotic network arising from the good femoral and reestablishing the circulation. Patient had both dry gangrene and advancing infection.

impossible to pick the skin up and the atrophy at times is so marked as to resemble scleroderma. Quite often atrophy of the small bones of the foot can be made out. In this series of 42 amputations atrophy of the bone manifesting itself in the disturbed trabeculation of the lower end of the tibia was made out in 16 cases, or 38 per cent.

The above three physical signs, pulsations, elevation pallor and atrophy, are the ones we must depend upon for the demonstration of vascular disease before gangrene has appeared. However, the character of gangrene itself often is definite evidence of circulatory disease because in dry gangrene there is always greatly impaired circulation. This point has been proved by the analysis of the clinical records of our cases. When infectious gangrene is present one may often find excellent circulation and, on the other hand, just as often a greatly impaired circulation.

ADVICE TO GIVE PATIENTS WITH CIRCULATORY DISEASE OF THE LOWER EXTREMITY

If we are to prevent gangrene we must adjust the individual's physical exertion to the degree of the impairment of his circulation. In other words, we must teach the patient how to rest the extremity. The resting of the extremity must be in proportion to the seriousness of the disease. The greatest use of our extremities is in walking and it is not until there is some reason for curtailing this form of physical exertion that we appreciate how much unnecessary walking we do. The old adage, "Use the head and save the feet" applies well to diabetic extremities. The patient must be taught how he can live without using his legs and, of equal importance, to walk as slowly as possible when he has to use them. The individual with diabetic legs should never hurry, never run, and walk as little as possible. Another point I emphasize to diabetics is that when sitting down to rest, the feet should be elevated because of the help that position will give the circulation. I have seen diabetics with greatly impaired circulation of the lower extremities get along for many years by following these rules.

TREATMENT AFTER ONSET OF GANGRENE

Too often the first intimation of vascular disease of the lower extremities is the appearance of gangrene. I will outline the treatment of this condition by setting down the rules which experience and the study of these anatomical specimens have indicated.

The first essential in the treatment of diabetic gangrene is the determination of the ex-

tent of vascular disease which is done by the method already outlined. If there is a great deal of swelling of the involved extremity so that one cannot feel the pulsations in the foot the good leg and foot should be carefully examined. The disease is never unilateral but always bilateral. I do not mean to say that the disease is of the same extent in the two legs. Very often one is involved more seriously than the other but if there is vascular disease in one limb there is always plenty of evidence of vascular disease in the other one.

If by the examination the circulation is found to be good, what treatment is indicated? First, however, what are the clinical indications of good circulation? In the diabetic this means that there is a good popliteal pulsation and at least one good pulsation in the foot, no atrophy and no elevation pallor. When one has proved without reservation that the circulation is good one may treat infection in exactly the same way one would if the patient did not have diabetic or vascular disease. If gangrene is present it will be principally of an infectious nature as dry gangrene never occurs with good circulation.

With good circulation, if the infection is mild or very sluggish, drainage can be instituted by hot wet packs, by soaking in a foot bath or by local incision and drainage. If osteomyelitis of the toe has destroyed most of the bone the toe can be amputated. When there is acute lymphangitis extending up the leg it is always best to wait until that acute manifestation has subsided.

If the circulation is good and the infection is malignant and advancing, if there is infectious gangrene with edema, cellulitis or large purplish blebs, if the patient is toxic, or if there is marked leukocytosis, immediate high amputation is the only measure that will save the life of the patient. Never, under these circumstances, amputate below the knee. Amputation below the knee may be done when there is good circulation and when the infection present is very mild and sluggish.

WHEN THE CIRCULATION IS POOR OR QUESTIONABLE

If the circulation is poor, or if the examiner questions whether or not it is good, two courses are open. The first is to delay any surgical procedure and put the leg under a warm air tent, keeping the temperature meticulously between 90 and 95 degrees Fahrenheit and the electric bulbs at least 8 to 10 inches above the foot. Diabetics are extremely easily burned. Watch for the advancing of the infectious process. This often takes place under the plantar fascia and evidenced only by a slight swelling and

tenderness to pressure. Rarely is redness present. With a poor or questionable circulation, under no circumstances amputate the toe or locally incise the infection. The reason for this is that the tissues are so poorly supplied with blood that more damage than good is done. With poor or questionable circulation we never use wet dressings of any kind because soaking the skin with greatly diminished circulation simply makes the skin and subcutaneous tissue better culture media for bacteria.

When advancing infection is present with poor or questionable circulation immediate amputation should be done above the knee. Or if, after considerable delay, one is convinced of the serious nature of the vascular disease the same surgical procedure should be carried out. The more serious the vascular disease the higher the level of amputation.

Table 5. *Purely Clinical Classification of Gangrene (26 Barnes Hospital Cases)*

Class	Cases
Typical picture of popliteal occlusion	2
Circulatory impairment predominates the clinical picture (dry gangrene)	9
Definite circulatory impairment but with advancing infection	10
Circulation definitely good but infection severe and advancing	5

The essential thing to bear constantly in mind is that after the onset of diabetic gangrene we are dealing with a patient whose life is in grave danger. It is absolutely essential that the amputation should be done through tissues *known to have good circulation*. In the series of 26 cases at the Barnes Hospital which I have reported there were 8 deaths, a mortality of 31 per cent. I do not apologize for this mortality but rather believe it is true evidence of the seriousness of the condition. Diabetic gangrene indeed is a malignant disease.

I have heard the principle advanced that one can amputate a toe or amputate below the knee even in a case with poor circulation and then, if the wound does not heal well, amputate at a higher level. In my experience, diabetics will not stand two operations. It is well to remember that the diabetic can stand but one major surgical procedure and that at this one time the amputation must be through tissues well supplied with blood.

I have purposely said nothing about dietetic treatment; that is a subject unto itself. With insulin it is not a difficult matter to get patients rapidly sugar free and keep them so. In my opinion, the principles here laid down are of equal or greater importance than the proper diet.

CLINICAL PATHOLOGY OF EPIDEMIC ENCEPHALITIS

GEORGE IVES, M.D.

ST. LOUIS

The clinical pathology of the St. Louis type of epidemic encephalitis was to be found almost entirely in the blood and in the spinal fluid. In nearly 100 per cent of the cases both the blood and spinal fluid showed pathological variations. None of these variations were unusual findings. The variations in the blood are the same as are frequently observed in various bacterial infections. The abnormal findings in the spinal fluid are no different than may be observed in a large number of conditions which may affect the central nervous system.

Since, as is well known, no etiological agent can be demonstrated in encephalitis, and since the blood and the spinal fluid reveal variations which are not pathognomonic of encephalitis, one might conclude that blood and spinal fluid examinations were of little value in the diagnosis of encephalitis. A diagnosis is often like a stone arch. Both a diagnosis and a stone arch for their construction require the assembling of properly constructed units. In the diagnosis of encephalitis the units are history, symptoms, temperature, physical and mental findings and blood and spinal fluid examinations. Without the blood and spinal fluid examinations the structure of the diagnosis is incomplete. The diagnosis is not unassailable.

There is no doubt that during this epidemic correct diagnoses were made without blood and spinal fluid examinations. The diagnosis of a disease when it is epidemic is often correctly made upon strikingly meager evidence. During epidemics laymen may become good diagnosticians, if a good diagnostician is one who can make a correct guess. A correct guess should not be accorded the same dignity which is due a correct diagnosis. The latter is based upon the accumulation of all available evidence and the proper interpretation of all the findings. During this epidemic I observed that the diagnosis of encephalitis was applied to cases of brain tumor, neurological syphilis and trauma. Some of the incorrect diagnoses were corrected by obtaining complete data from all the sources which have been suggested.

The total leukocyte count proved to be of much more diagnostic value than I would have anticipated. We made one or more total counts on 35 patients. In no instance did we observe a count below 5,000 leukocytes. In six cases the counts were between 5000 and 10,000; in 26 cases the counts were between 10,000 and

From the Clinical Laboratory of the Missouri Baptist Hospital and Dr. George Ives' Clinical Laboratory.
Read before the St. Louis Medical Society, October 17, 1933.

20,000; in two cases the counts were between 20,000 and 30,000; and in only one case was the count over 30,000 in which case it was 32,000. It will be noted, then, that in 82.9 per cent of the cases the leukocyte count was over 10,000.

Frequently in this epidemic the total leukocyte count correctly suggested the possibility of encephalitis. The leukocyte count pointed the way to a diagnosis; as an instance of this I will give one illustration, viz.:

A physician requested me to see a patient and to make such examinations as I considered necessary. He was impressed with the possibility of malaria but suggested that I perform spinal puncture if I thought it was indicated. From the data which I was able to obtain at the bedside I was impressed with the possibility of typhoid fever and I took blood specimens with that possibility uppermost in my mind. The leukocyte count was 17,000. Without completing the other laboratory examinations I returned to the patient to perform spinal puncture because I believed that the leukocyte count interpreted in conjunction with the clinical condition of the patient excluded the probability of either malaria or typhoid fever and pointed to encephalitis. The spinal fluid showed 135 cells and 1 plus globulin. These findings constituted another unit in the diagnostic structure, and I believe all the evidence collected both clinical and laboratory was sufficient to establish the diagnosis of encephalitis.

The Schilling differential count which frequently is capable of giving valuable diagnostic and prognostic information, especially in bacterial infections, did not satisfy my expectations as regards its value when applied to encephalitis.

Since a leukocytosis was observed in a high percentage of cases we may inquire as to which cells were affected in this increase. All the types of cells, monocytes, lymphocytes and granulocytes, rather frequently maintained their normal relative proportions. When this condition existed together with a moderate increase of stab forms and with monocytes at high normal or increased, we had a picture which occurred with sufficient frequency to suggest encephalitis. But to dignify this picture as being diagnostic of encephalitis seems unjustified. Neutrophilia with a corresponding lymphopenia was not uncommonly observed. The highest percentage of neutrophils observed was 89 and the lowest percentage of lymphocytes was 4. In a very few instances there was a moderate relative lymphocytosis. This latter picture was observed during the course of active disease and also in the period of convalescence.

The monocytes were frequently present in normal and high normal percentages but at times they were increased up to 11 per cent and in two instances they were absent. The eosinophils were usually absent but in a few instances they were present in low percentages. Myelo-

cytes were never recognized in our studies and juvenile forms were observed only in a few cases in low percentages. The stab forms, in percentages, frequently ranged from 10 to 20 but percentages slightly below 10 and as high as 39 were observed. The degree of nuclear shift was never extreme.

From an examination of our data on blood findings in encephalitis I do not find any justification for an attempt to prognosticate from the blood pictures. Patients with good blood pictures died and patients with less favorable blood pictures recovered. It is probable that these blood pictures teach that death in encephalitis is not due to toxemia or to a pathological bone marrow. Although my statements about the blood picture may seem to detract from the value of the picture, it is my opinion that these findings were of considerable value when interpreted in conjunction with other findings. The blood findings will possibly be of more value in arriving at a diagnosis in sporadic cases of encephalitis.

In encephalitis the spinal fluid findings show rather wide variations. Rarely in our experience it very closely approached normal, and I would not be surprised if others have observed normal fluids in encephalitis.

Many of the fluids were clear and colorless like distilled water. Some showed turbidity varying from a very slight to a moderate degree. In one case the fluid was pale yellowish. This patient was icteric. A pellicle was observed on a few occasions and this phenomenon would probably have been observed more frequently if proper conditions for the formation of the pellicle had been observed. Only on rare occasions was there macroscopic blood in the fluids. In only one case did we suspect that the blood was due to spontaneous hemorrhage.

In one of our cases the only abnormal finding in the spinal fluid was a 1 plus globulin test. A subsequent examination, however, showed 3 plus globulin and 43 cells. In another case the only abnormal finding was 10 cells. In all our other cases the findings were more striking. The cell count in our series varied from 1 to 960 cells. The range between 100 and 400 includes the large majority of the cases. The small lymphocyte was usually present in high percentage but as many as 50 per cent polymorphonuclears were observed.

As regards the globulin content of spinal fluid in encephalitis, we rarely reported negative or doubtful tests. In a large majority of cases the report was 1 plus. In a few instances the reports were 2 plus and 3 plus. No very strong globulin reactions were obtained.

We considered it important to perform the Wassermann test on all fluids in suspected encephalitis. In one case we established a diag-

nosis of neurological syphilis. It is a fact that neurological syphilis may imitate encephalitis. The association of the two conditions might create a difficult diagnostic problem.

We have had very little experience with the colloidal gold test on the spinal fluids of encephalitis patients. We applied the test only to a few of the fluids and all of them gave a weak reaction in the meningitic zone. Since the diagnosis was usually satisfactorily established before the colloidal gold test would have been performed, the test was usually omitted as unessential. However, in the examination of the spinal fluid in all obscure conditions the colloidal gold test should be used.

We have examined our records to see if prognostic information was contained in the spinal fluid findings. We found no information which aided in foretelling the final outcome of the illness or which aided in distinguishing between the mild or more severe types of infection.

A numerical report on spinal fluid pressure is usually of little value because other findings give essential information. I have never attempted to make accurate determinations of spinal fluid pressure. The procedure of determining pressure requires special apparatus, it requires additional time and it may cause inconvenience to both patient and operator. The chief objection to numerical reports on spinal fluid pressure is that they are so frequently erroneous as to be misleading. Since the determination is so frequently inaccurate, I have thought that an impression based upon the rapidity of flow of fluid is less likely to lead to misinterpretation. Comparing the rate of flow of spinal fluid from the needle in cases of encephalitis with the rate in normal individuals, one will gain the impression that the pressure is usually raised in encephalitis. In some few cases one will get the impression that the pressure is normal or even less than normal. Impressions of both the rate of flow and readings with instruments may be misleading.

SUMMARY AND CONCLUSIONS

An attempt is made to describe the clinical pathology of encephalitis based upon 41 cases. Blood studies were made in 35 cases and the spinal fluid was obtained for study in 39 cases.

No etiological agent was found in either the blood or the spinal fluid.

As leukocytosis occurred in 82.9 per cent of these cases it is believed that the finding of leukocytosis is a definite diagnostic aid. The Schilling count revealed various infectious pictures. One picture was described which by itself may suggest encephalitis.

The spinal fluid was always abnormal in our series. In two instances it closely approached

normal. The usual findings were lymphocytosis and very moderate increase in the globulin. Pellicle formation was observed in a few instances. The spinal fluid pressure was usually increased.

The spinal fluid examinations were of extreme importance as they often completed the diagnosis. Since the same findings are to be observed in other diseases they were of value only when given their proper place in the diagnostic data.

301 Beaumont Medical Building.

CONGESTIVE HEART FAILURE

P. T. BOHAN, M.D.

KANSAS CITY, MO.

The term congestive heart failure is used to designate a functional disturbance of the myocardium causing distention of the veins and stasis in the visceral organs. Venous stasis as a sign of heart failure was recognized and fairly well understood by the older clinicians under the term decompensation. The sequence of events in the older conception was valvular disease followed by compensatory hypertrophy, and eventually dilatation with venous congestion. The modern conception is that heart failure means myocardial failure and, in an individual past forty years of age, usually nonvalvular. The use of the terms "compensation" and "decompensation" has largely been abandoned because of their vagueness in designating the amount of reserve in the heart muscle. Similarly, venous stasis is a late and seldom an early sign of a failing heart and for this reason the term congestive failure is not wholly satisfactory. However, since the classification of heart disease is now more or less standardized, the term congestive failure will be applied to all forms of heart failure not of the anginal type, whether venous congestion with dropsy dominates the picture or is entirely absent.

For the general practitioner, who is the first to see most of the patients with heart disease, it is important to keep in mind a good definition of heart failure. Mackenzie¹ defined heart failure as "that condition in which the heart is unable to maintain an efficient circulation during the efforts necessary for the daily life of an individual." "Inability of the heart to discharge its contents adequately," given by Lewis,² is almost as good. Both definitions cover all cases of failure, whether there is congestion or not. This, the term congestive failure does not do and many patients die of heart disease without either failure or angina.

¹Read at the 76th Annual Meeting of the Missouri State Medical Association, Kansas City, May 1-4, 1933.

Heart failure means ventricular failure and when advanced both ventricles are involved. However, early symptoms are frequently due to failure of only one ventricle. Temporary failure of the left ventricle alone in cases of hypertension, aortic disease, or coronary sclerosis, is the main factor in pulsus alternans and in many cases of cardiac asthma and pulmonary edema. These conditions frequently abate when the right heart fails. Right ventricular failure, when associated with orthopnea, dropsy, liver enlargement, and so forth, is usually easily recognized. This condition seldom develops suddenly except when due to a disturbance of rhythm. For days, weeks, or months, there are usually symptoms indicating right heart strain without any signs whatever of venous congestion. In this "precongestive" stage the only manifestation may be breathlessness on effort or attacks of nocturnal dyspnea. Without this symptom heart failure, either in the early or late stage, cannot be diagnosed. Breathlessness means panting or labored breathing and not the sighing respiration of the neurotic. Strenuous tests to bring out this symptom are usually unnecessary; the voluntary complaint by the patient on merely climbing a flight of stairs is sufficient. The degree of effort dyspnea usually gives us more information as to the amount of cardiac reserve present than a study of the electrocardiographic record. Neither the heart rate nor the blood pressure even after exercise gives information of much diagnostic importance. Venous pressure in this stage is always high. Distention of the cervical veins when the patient is recumbent is always present and usually parallels the orthopnea. Pulsation of the cervical veins is better made out by inspection than palpation.

CARDIAC FINDINGS

These are much less important in the diagnosis of heart failure than the history and the general signs, viz.: shortness of breath on effort and the signs of venous congestion. The size of the heart, best made out by location of the impulse, may be of some value. However, there may be signs of high grade failure with only slight increase in size, while on the other hand there may be considerable enlargement and no symptoms or signs of lessened cardiac reserve. The character of the murmurs due to valvular disease does not change with the onset of failure. In cardiac hypertrophy, such as occurs in hypertension, a loud, blowing systolic murmur at the apex, due to relative insufficiency of the mitral valve, is a common finding with or without failure. In fact, there may be no murmurs, not even in the tricuspid area. The char-

acter of the heart sounds is more important than murmurs. Weak heart sounds or tic tac sounds are often found with a failing myocardium, but with the patient in the recumbent position indistinct sounds may mean nothing more than an emphysema. The most important auscultatory phenomenon is that of gallop rhythm, usually heard best at the apex and when the rate is above 100 easily recognized. It is a definite sign of a failing myocardium.

DISTURBED MECHANISM IN CONGESTIVE FAILURE

Before failure with venous congestion can occur the right ventricle must dilate but the size of the chamber of the ventricle is not an index to the efficiency of the ventricular contraction. The right ventricle may be hypertrophied and dilated for years without symptoms of lessened reserve. With increased pressure in the pulmonary circulation, as in mitral stenosis, the right ventricle hypertrophies, the fibers stretch and the cavity gradually increases in size. This is physiological dilatation. Regardless of the degree of dilatation, in so far as the ventricle can adequately discharge its contents, normal pressure is not increased. Once the ventricle becomes unable to pump out its contents pathological dilatation ensues, venous pressure rises and the picture of congestive heart failure develops. Pathological dilatation is thus a symptom of heart failure and not its cause. The muscle fails first. The exact nature of the myocardial changes resulting in pathological dilatation involves a consideration of the whole question of disturbed mechanism in congestive heart failure.

In his discussion of dilatation of the heart, White³ speaks of "stretching of the heart wall, due to an *atonic* (italics mine) state of the muscle." Following stretching of the wall, he continues: "the *tone* of the muscle may partly recover but a permanent stretching of the heart may persist." From these statements by White as well as from my own impressions based upon the study of clinical cases the statement seems justified that in heart failure the initial change is impairment in the property of tonicity, followed by dilatation which produces increased venous pressure, lessened oxygenation of the blood and venous stasis within the visceral organs.

CAUSES OF HEART FAILURE

It is rather interesting that two of our most eminent cardiologists should hold such widely divergent views upon the main underlying etiological factors. White³ particularly emphasizes strain and overwork from valvular disease and hypertension, while Lewis² in his new

book minimizes these factors and contends that myocardial failure even when valvular disease or hypertension coexist is usually caused by an infection such as a "cold, bronchitis, or the flu." It is refreshing to note that at least one cardiologist believes the heart muscle is not immune to the toxic effects of infection. That a small percentage of cases may be due to acute myocarditis and a few others to the effects of some toxic agent upon the heart muscle there can be very little doubt. But in nearly half the cases dying from heart failure anatomical studies show no structural changes in the heart muscle.

The postmortem studies by Helwig on 109 cases of heart failure at St. Luke's Hospital showed that in 55 per cent the failure was due to coronary disease with or without myocardial fibrosis. No case of chronic myocarditis or myocardial degeneration was found that could not be explained by diseased coronaries. There was one case of acute myocardial degeneration, the cause not determined. In approximately 44 per cent the cause of the heart failure was due to exhaustion of the myocardium. Therefore the two major factors in heart failure are overwork and inadequate nourishment, the latter due to coronary disease.

It requires little stretch of the imagination to see how the straining of the right ventricle against the load of a mitral stenosis can ultimately result in fatigue, loss of tone and systemic congestive failure. The same is true of the left ventricle in hypertension, aortic regurgitation or aortic stenosis. In nearly all these cases, except hypertrophy, the heart muscle is normal. Diseased coronary arteries by lessening the blood supply to the heart muscle is a common cause of failure in patients who have had or may not have had angina. Diseased coronary arteries greatly handicap the heart in coping with the extra expenditure of energy required in cases of valvular disease or high blood pressure. Coronary sclerosis by increasing the irritability of the heart muscle frequently causes auricular fibrillation that may be an important factor in the muscle failure. Intra-ventricular block, by no means uncommon, is another example of failure due to coronary sclerosis.

The importance of frequency of disturbances of rhythm as a factor in heart failure is not sufficiently appreciated. Failure in paroxysmal tachycardia is usually recognized, but auricular fibrillation is a much more common cause and its importance is not adequately stressed. When the heart is fast, even above 90, as it usually is in auricular fibrillation, the rapid and irregular contractions of the ventricles sooner

or later result in fatigue of the muscle. When congestive failure and fibrillation coexist it may be assumed in nearly all instances that the fibrillation appeared first. This is true whether or not an organic lesion exists. Auricular fibrillation is found in more than half the cases of heart failure. The sequence of events is fibrillation; fatigue of the heart muscle; dilatation and congestive failure. Breathlessness and even death from fibrillation without any signs of congestive failure are by no means uncommon. These may occur without any disease of the valves or of the heart muscle, such as in goiter or acute or chronic infection, and sometimes from the adrenalin added to the local anesthetic used in tonsillectomies.

DRUGS IN THE TREATMENT OF HEART FAILURE

Digitalis and Strophanthin.—The action of these two drugs is the same. They not only stimulate the vagus but unite and become fixed in the muscle fibers of the myocardium. The effect on the function of the heart muscle is depression of conductivity, increased irritability and lessening of dilatation, probably by the effect on tone. The chief effect of digitalis is in lessening conductivity, especially of the auriculoventricular bundle. The evidence of this is in a slowing of the rate, almost invariably in auricular fibrillation and to a less extent in cases with a normal rhythm, especially if the function of the bundle is impaired as from infection or in old age.

The cardinal indication for digitalis is in auricular fibrillation with or without congestive failure. In these cases about 80 per cent of the effect is due to its action on conduction: the rate may be halved and the energy is correspondingly conserved.

In recent years there has been a tendency to withhold digitalis in cases of auricular fibrillation, especially if the rate is not markedly increased, unless there are signs of congestive failure. This teaching I do not accept. Although in rare cases of fibrillation the rate may be slow while a patient is at rest, with even moderate activities the increased rate is much greater than when the rhythm is normal. This is needless expenditure of energy and to withhold the drug for use as a whip in the stretch is bad therapy.

Digitalis is also indicated in cases of failure with normal rhythm but uniformly good results cannot be expected. The reduction in rate is minimal and should not be used as a guide to dosage. The beneficial effect in nonfibrillating cases according to White³ is that "the tone of the heart muscle and completeness of contraction, when there is dilatation and failure, are

much increased by digitalis." Christian⁴ advises the use of digitalis in cases of hypertension to delay the onset of failure. This is not bad therapy.

The effects on the heart of toxic doses of digitalis are due to its action in depressing conduction, producing heart block, and to its action in increasing irritability, as manifested by extrasystoles, paroxysmal tachycardia, auricular fibrillation and sometimes ventricular fibrillation and sudden death.

Digitalis is not a harmless drug. Withering recognized a diminution in urine output from overdosage. Those who are not familiar with its toxic properties and the indications for its administration are inclined to give too much rather than too little. It is usually safe to spend two or three days in digitalization and then the maintenance dose for a patient of average size is usually 5 to 9 1/2 grain tablets a week and not 2 to 3 tablets a day, as are often given. When there is indication for the hypodermic or intravenous administration my preference is strophanthin intravenously, or ouabain either intravenously or intramuscularly. The maximum dose of strophanthin is 1/120 grain and should not be repeated within eight hours and then not more often than every 36 to 48 hours. Of course, strophanthin should not be given to a patient who is taking digitalis or who has recently had digitalis.

Diuretics.—In the treatment of cardiac edema the use of certain drugs to produce diuresis is usually essential and often life saving. The best of these is salyrgan, 1 c.c. intravenously (never subcutaneously) every second or third day. The dose can be gradually increased to 2 c.c. The effects are produced within a few hours and a urine output of 2000 to 4000 c.c. in 24 hours is not uncommon. Although a mercurial preparation albuminuria is no contraindication to its use. Ammonium nitrate, 90 grains daily, increases the diuretic effect of salyrgan and when given alone is a fairly good diuretic. The best diuretics for oral administration are theophyllin, 5 grains, three times a day, or theobromine sodium salicylate, 45 to 60 grains daily. Both of these drugs irritate the stomach and must be temporarily discontinued after two or three days.

906 Medical Arts Building.

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THE MECHANISM OF HEART BLOCK

L. B. HARRISON, M.D.

ST. LOUIS

In 1906 Mackenzie defined the term heart block as that condition where the stimulus for contraction passing from auricle to ventricle by the muscular fibrils joining the auricle and ventricle is stopped or blocked on account of some defect in those muscle fibers. This conclusion was reached following brilliant observations and experiments by several workers the first of whom was Gaskell who, as early as 1883, proved that the auricular impulse spread to the ventricle by passing over the muscular connection which exists between these two parts. His work was not regarded as applicable to the mammalian heart until 1893. In that year Stanley Kent in England and His in Germany proved Gaskell's claims conclusively and His went so far as to look for a definite muscular bundle connecting the auricle and ventricle and found the bundle that now bears his name.

Tawara in 1906 reported his discovery that there is within the mammalian heart a system of peculiar musculature (the auriculoventricular system) which beginning as a small root in or near the base of the interauricular septum on the right side, eventually spreads out in an aborescent form beneath the endocardium of both ventricles its final twigs becoming everywhere continuous with the ordinary musculature of the ventricles. This was confirmed later in the same year by Keith and Flack.

Erlanger experimented on dogs and found that with complete destruction of the bundle of His the vagus has no control over the ventricles and pointed out that destruction of the bundle and of that alone brings about complete and permanent heart block.

Heart block or impairment in conduction from auricle to ventricle may be considered as a matter of degree the first stage of the process being mere delay in conduction time represented or recognized by increase in the A-C interval in jugular tracings and in the P-R time in electrocardiograms. From this stage there are all degrees of partial heart block to complete block.

All blocks may be divided into three types, namely: Sino-auricular block, auriculoventricular block, and intraventricular block.

SINO-AURICULAR BLOCK

Wenkeback in 1906 demonstrated by exact clinical methods that a delay may occur in the

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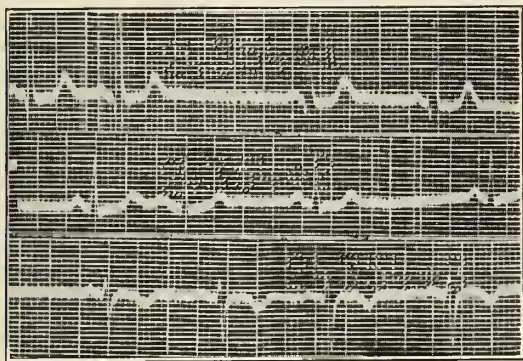


Fig. 1. Sino-auricular block. Note duration of second cardiac cycle in lead I.

conduction of the cardiac impulse from the sinus node to the auricle in the human heart. Hering also brought about complete stoppage of the supraventricular parts of the heart by a cut made at the sino-auricular junction.

Sino-auricular block, or block of the impulses from the sinus node to the auricular musculature, is observed only rarely. Sphygmograms and electrocardiograms will not show a sino-auricular interval corresponding to the auriculo-ventricular interval and delayed conduction here if it occurs cannot be recognized. All conditions therefore in which the first stage of block might exist are not recognized as such as the sino-auricular interval may be greatly prolonged without detection by any of the graphic methods. As the block increases, however, it can be recognized for a complete heart cycle will be dropped, the next one following after an interval of almost double the normal interval. There is no evidence of auricular activity during the pauses pointing to a block of the impulses above the auricles, that is, at the sino-auricular node. Many of these cases of sino-auricular block can be controlled with atropine. However, many are caused by digitalis and they have also been observed in degrees of heart disease and acute febrile conditions.

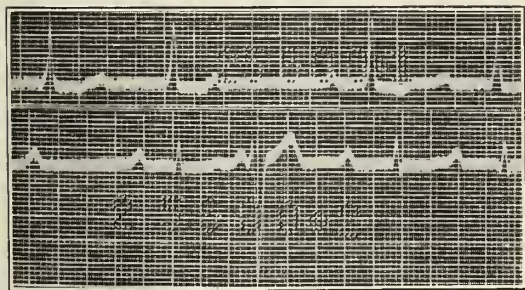


Fig. 2. Auriculoventricular delay. The P-R interval is .44 seconds.

AURICULOVENTRICULAR BLOCK

This type of heart block is the commonest clinically and may be of all grades, from slight delay in conduction as evidenced by an increase in the P-R interval in electrocardiograms to complete block where no auricular stimulus reaches the ventricles.

Auriculoventricular block has been divided into two, sometimes three, classes known as (1) simple auriculoventricular delay, (2) partial heart block and (3) complete heart block; however, it is a matter of degree of conduction impairment rather than difference in mechanism.

Partial Heart Block.—All types of auriculoventricular block other than complete block can really be grouped under this heading as all blocks here are partial unless there are no auricular impulses transmitted to the ventricle. The mild cases of block are usually unrecognized except by graphic records unless they are great enough to produce dropped beats.

The mild blocks are probably much more common than we suspect, although with ever increasing knowledge of heart block and with the electrocardiograph at our disposal they are being more and more recognized. Mild blocks, or auriculoventricular delay may occur in any type of febrile disease and especially in rheumatic fever. A slight degree is frequently seen in cases of rheumatic valvular disease the age as a rule being between adolescence and thirty to thirty-five years. Syphilis is responsible for a number of cases in which the age limit is usually higher. Arteriosclerosis may be considered as the most common factor in producing heart block, these patients being as a rule over forty-five years of age. Stokes-Adams' disease is seen more in these patients than in any other type.

Occasional dropped beats and higher degrees of block are recognized clinically and sometimes may be accurately determined by observation of the jugular veins and ventricular rate. The blocks may run from very occasional dropped beat to 4 to 1 or 5 to 1 block.

The rhythm of the ventricles may be regular

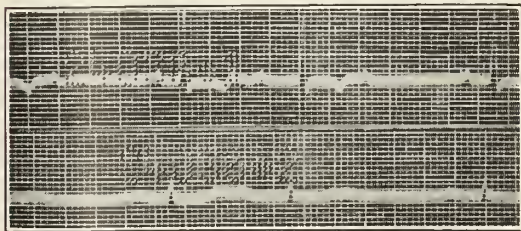


Fig. 3. Partial heart block, 2 to 1 block, transient.

or irregular. If the ventricles respond to each second or third auricular beat a 2 to 1 or 3 to 1 block is established with regular ventricular rate. The ventricular rhythm is irregular when it responds after unequal numbers of auricular impulses, such as seen in infection, drug intoxication or auricular fibrillation.

Complete Heart Block.—This is characterized clinically by slow ventricular rate, usually about 30 beats per minute. In a series reported by Willis the lowest rate was 22 the highest 48. In children and infants the ventricular rate in heart block is usually 50 to 70. About 60 per cent of these patients have Stokes-Adams' syndrome.

In this condition we find a complete auriculoventricular dissociation, the so-called idioventricular rhythm. The auricular rate may be normal or even increased. Here it is interesting to note that Wenkeback pointed out that the small beats of the ventricle in such a condition would be insufficient to fill the arteries and that occurrence of sufficient number of them would lead to cerebral anemia and the Stokes-Adams' phenomenon. In one case with two attacks Wenkeback took polygrams which showed this condition was due to this type of rhythm and not due to cessation of beats.

The diagnosis of complete block by auscultation alone can be made in many cases. The sounds representative of auricular contractions can be heard quite distinctly, these sounds being of entirely different rate and timing than the ventricular contractions. In some cases the waves in the veins at the root of the neck are visible and can be compared to the ventricular contractions. The more satisfactory method of examining such cases, however, is by means of graphic methods, the electrograph being the most satisfactory as it yields a larger variety of information.

The mechanism of partial or complete auriculoventricular block may be explained by failure of the auriculoventricular bundle to re-

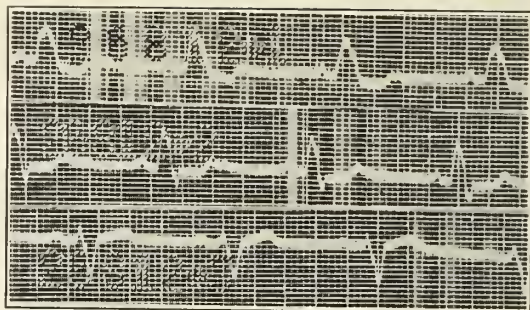


Fig. 5. Left bundle branch block.

cover from previous activity. This may be due to faulty nutrition from disease, vagus nerve action, or from fatigue, as in extreme tachycardia, such as auricular flutter, auricular fibrillation or paroxysmal tachycardia with high rate.

Heart block itself in these high rates is not of serious significance in that here the block is a means of preserving the ventricle. Heart blocks of low or normal rates, however, are usually of serious import. The site of the block may be in any part of the His bundle, from its origin to its bifurcation in the ventricle. The most susceptible and common site of blocking is at the point where auricular muscle enters the junctional tract, it appearing that toxic and vagal influences act chiefly at this point. Destructive lesions are more common lower down in the bundle itself.

INTRAVENTRICULAR BLOCK

So-called bundle branch block or block of the terminal or main branches of the auriculoventricular bundle is much more common than formerly thought, in that electrocardiograms are necessary for its detection. At the Massachusetts General Hospital during the last fifteen years to 1931 there were more cases of intraventricular block than of auriculoventricular block in those cases in which electrocardiograms were obtainable. Undoubtedly there are many cases

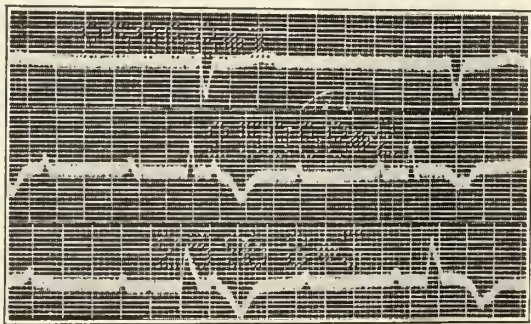


Fig. 4. Complete heart block. Total dissociation between auricles and ventricles.

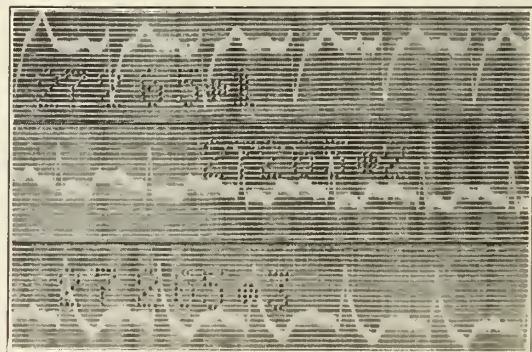


Fig. 6. Right bundle branch block.

of blocking of some of the smaller branches which are not recognizable even graphically.

When marked delay in conduction of either of the two main branches of the bundle occurs it may be recognized by the electrocardiogram and may be designated as either left or right branch block. If the block is in both bundles it may be indistinguishable from auriculoventricular block, but when one branch is involved the graphic equilibrium of the ventricles is disturbed.

Right and left bundle branch block was considered present on levocardiograms and dextrocardiograms, respectively, on curves indicative of bundle branch block until the recent work of Wilson, Oppenheim and others. These men in their work on human hearts as compared to dog hearts gave quite conclusive evidence to the contrary, namely; that left bundle branch block was present on the levograms and right bundle branch block was present on the dextrograms.

Left bundle branch block is about four or five times more common than right bundle branch block. This may be due to more frequent sclerosis of the descending branch of the left coronary artery causing more impairment of the blood supply.

SUMMARY

1. The transmission of the stimulus for contraction in the human heart is dependent on a system of musculature, the auriculoventricular system.

2. Heart block may be considered as a matter of degree, depending upon the site and degree of impairment in the auriculoventricular system rather than upon difference in mechanism.

3. Sino-auricular block is observed rarely and unless it is great enough to produce dropped beats it cannot be recognized clinically or graphically.

4. Mild auriculoventricular block, or auriculoventricular delay, without dropped beats and intraventricular block are recognized only by means of the electrocardiogram.

5. Intraventricular or bundle branch block is more common than formerly was thought and recent work has shown that curves formerly considered as right and left bundle branch block are most probably left and right bundle branch block, respectively.

601 University Club Building.

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EXTRASYSTOLES AND PAROXYSMAL TACHYCARDIA

CARL R. FERRIS, M.D.

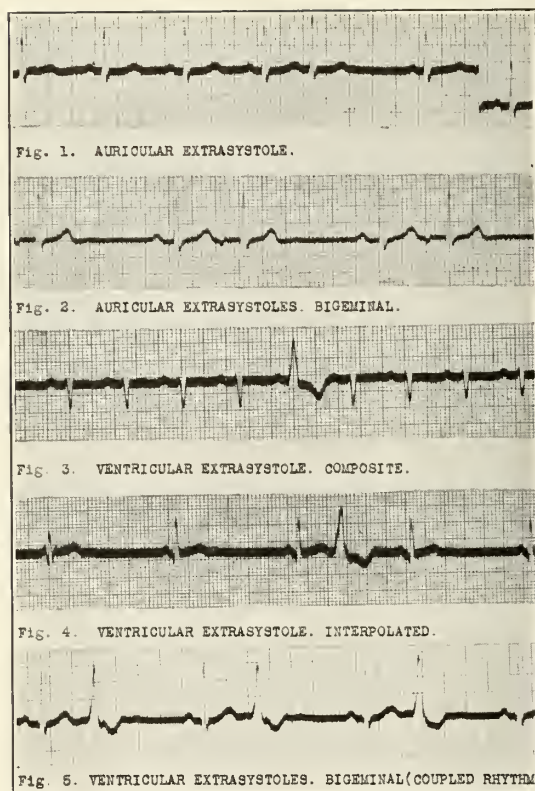
KANSAS CITY, MO.

Extrasystoles (or premature beats) are the simplest and commonest abnormalities of cardiac rhythm. Although usually not of great clinical importance their presence justifies painstaking investigation into their causes. Paroxysmal tachycardia, related to premature beats in manner of production, is of more clinical significance due to frequent severe or alarming symptoms or because of an associated grave cardiac disease.

Premature contractions of the heart are due to abnormal stimuli arising in various parts of the heart, the auricles, ventricles, and the auriculoventricular node or bundle. These "extra" or "ectopic" stimuli arise from areas within the heart muscle apart from the normal pacemaker (the sino-auricular node). An area of increased irritability is held to exist at the point where the stimulus arises. The stimulus must occur when the muscle is not in a refractory state, that is, during contraction or recovery.

Auricular extrasystoles result from ectopic stimuli arising somewhere in the auricular muscle. The abnormal wave spreads in all directions, downward to the auriculoventricular bundle, giving rise to a contraction of the ventricles, and upward to the sino-auricular node to discharge the developing normal impulse. The dominant rhythm coming from the pacemaker is disturbed. The developing normal impulse

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is checked early by the premature ectopic wave. The pause that follows is the time taken for the impulse to travel from the ectopic focus to the sino-auricular node plus the usual time interval between two normal contractions. The interval between the preceding and succeeding normal contraction is less than that covered by two normal beats, therefore the pause is not "compensatory" as is seen after ventricular extrasystoles. Auricular premature contractions are usually followed by ventricular response, but frequently the ventricular contraction is abnormal. The earlier the auricular premature beat the more abnormal will be the ventricular response.

Ventricular extrasystoles arise from foci within the ventricles. The abnormal stimulus passes up the auriculoventricular bundle causing the premature ventricular contraction while the normal auricular beat is in progress or coming late in diastole it meets the normal wave as it comes through the bundle from the auricles and produces with it a composite contraction. The premature ventricular contraction does not usually disturb the sequence of stimuli from the sino-auricular node and therefore it is followed by a compensatory pause. Rarely the abnormal ventricular excitation wave may pass upward into the auricles to cause an abnormal auricular contraction which, in this instance, interferes

with the dominant rhythm. A condition equally as rare exists when the ventricular extrasystole appears very early or the heart rate is so slow that the abnormal ventricular response is "interpolated" between two normal ventricular contractions. Although premature ventricular contractions may arise from foci in either ventricle their separation is of little clinical importance.

Nodal extrasystole is a rare condition where an impulse arises in the auriculoventricular node and travels in both directions to the ventricles and auricles and causes simultaneous contractions of these chambers. The dominant rhythm of the pacemaker is disturbed. It has no great significance.

Ventricular extrasystoles are much more common and are at the same time of much less clinical significance than are auricular extrasystoles. Auricular premature beats occur more often in diseased than in normal hearts, especially during advancing years. They may be the precursors of the more grave disorders of rhythm in the auricles. With an associated mitral stenosis they are commonly the forerunners of an auricular fibrillation.

Ventricular extrasystoles occur ten times as frequently as auricular extrasystoles.¹ They occur at any age but are more common in old people and are relatively more numerous in the presence of heart disease than in its absence. This is probably to be explained by the greater strain on the heart muscle resulting from some defect in the heart like valvular disease, hypertension or coronary disease. Other abnormal rhythms may be preceded by them.

Premature beats have been produced experimentally in animals and in man. While many factors are known which produce or are associated with extrasystoles, the manner of their production is obscure. Although they are a common irregularity in diseased hearts they are not a sure sign of cardiac disease. The cause may frequently be found outside the heart. Flatulence; infection around the teeth, in the sinuses, lungs, biliary tract, prostate, pelvis, and elsewhere; intoxication from alcohol, tobacco, coffee and tea; overexertion, excitement, fatigue; hypertension and other cardiac disorders, and disorders of the central nervous system; and finally, digitalis and other drugs, may be factors in their production. Individual susceptibility is an important factor as shown by the induction of extrasystoles in some people and not in others by tobacco, tea, coffee, alcohol and certain drugs.

When extrasystoles occur every second beat they give rise to a bigeminal pulse or coupled rhythm. When they occur every third beat they

cause a trigeminal pulse and if they appear every fourth beat a quadrigeminal pulse results. Such regularly appearing premature contractions may have the same etiology as those appearing irregularly. They may be seen associated with organic heart disorders and after over-digitalization. The writer has observed bigeminal, trigeminal and quadrigeminal rhythms at different times in the same patient with coronary disease. A bigeminal or coupled rhythm from digitalis poisoning indicates a considerable percentage of the lethal dose has been given. As Pardee² states, frequently occurring premature beats are likely to be caused by a disease of the myocardium, except in the instance of coupled rhythm which is usually of benign origin. When two or three premature beats occur in succession the cause is probably always myocardial.

Extrasystoles may or may not produce symptoms. About one half of all individuals with this arrhythmia are unaware of its presence. Their clinical significance very largely lies in the fact that they make patients heart conscious which in turn makes them apprehensive. Frequently there is a precordial thump due to the first normal beat after the pause. At times there is a sensation of fullness in the neck occurring with the premature contraction as the result of a pressure wave forced into the neck veins from the auricles when the auricles are contracting at the same time the ventricle is in systole. Rarely the arrhythmia is felt in the temporal vessels when the head lies on the pillow. If circulation is interfered with when extrasystoles are numerous faintness and dizziness may result.

It is frequently very difficult to differentiate between the types of extrasystoles without the electrocardiogram. Other graphic records are of some assistance. In the absence of the cardiogram auricular and ventricular premature beats may possibly be differentiated by the presence or absence of the compensatory pause. This is an uncertain rule inasmuch as the degree of prematurity and the rate of the pulse make it difficult to measure the pause by the finger or stethoscope. In addition, a premature contraction is usually weaker than a normal beat, travels slower along the arteries, and at the wrist may not seem to be premature or the premature beat may be so weak that it is not felt in the radial pulse, a pulse deficit resulting. It is more important that extrasystoles be differentiated from other conditions more grave than from themselves. Frequently numerous irregularly appearing extrasystoles simulate auricular fibrillation. A bigeminal pulse may be mistaken for the serious pulsus alternans in which in-

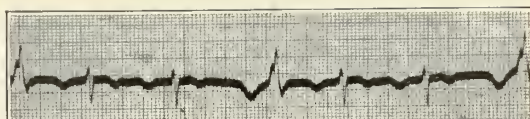


Fig. 6. VENTRICULAR EXTRASYSTOLES. TRIGEMINAL.

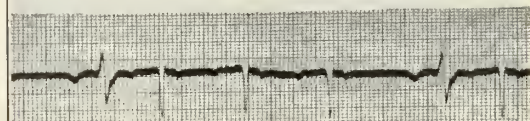


Fig. 7. VENTRICULAR EXTRASYSTOLES. QUADRIGEMINAL.

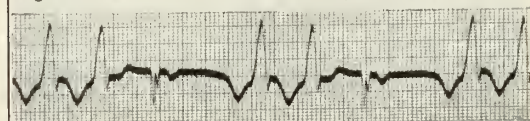


Fig. 8. VENTRICULAR EXTRASYSTOLES. OCCURRING IN PAIRS.

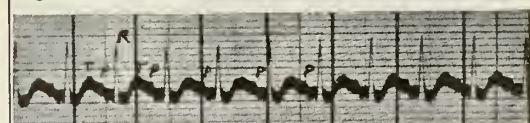


Fig. 9. PAROXYSMAL AURICULAR TACHYCARDIA.

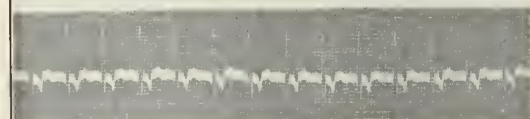


Fig. 10. PAROXYSMAL NODAL TACHYCARDIA.

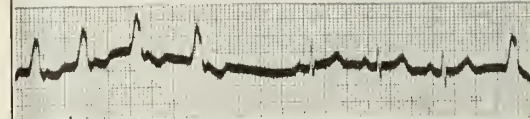


Fig. 11. PAROXYSMAL VENTRICULAR TACHYCARDIA.

stance only an accurate estimation of the pause will give the true answer without the cardiogram. Likewise, extrasystoles may be confused with heart block. The fact that premature beats tend to disappear by increasing the heart rate with exercise is an aid in interpretation.

Like extrasystoles the paroxysmal tachycardias may be auricular, ventricular or nodal. Rarely the sino-auricular node becomes the focus for paroxysmal tachycardia. The exact mechanism of production is likewise unknown. Whether they are due to a rapid regular formation and discharge of impulses from a single abnormal focus, or to a circus movement initiated by an excitation wave, or to some influence acting through the sympathetic nervous system are still matters of theory.

Auricular paroxysmal tachycardia is the most common type and is said to occur twenty-five times more often than the ventricular type. Those of nodal origin are very rare but occupy the same clinical importance as the auricular tachycardias. Paroxysmal auricular tachycardia is generally associated with no organic heart disease. Paroxysms arising in the auricles are

more often due to a disturbance in the cardiac nervous mechanism. Attacks usually end spontaneously and do no harm. At times this is not true and treatment to end such an attack may be life saving.

In extrasystoles the symptoms, though frequently alarming, are mild. At times, the symptoms in paroxysmal tachycardia may be mild or the disturbance in rhythm may pass unnoticed, but in most instances an attack produces one of the most dramatic pictures in medicine. The attack is characterized by an abrupt sudden onset. There is fear of impending death. This is especially true of first attacks and even of subsequent attacks until their significance can be carefully explained to the patient. Since such attacks are usually self-limited and not infrequently terminated by some simple procedure, the physician occasionally becomes a magician in the eyes of the patient and family. A typical attack is accompanied by a regular rapid palpitation and throbbing of the vessels in the neck. There is a feeling of exhaustion and the skin is pale, cold and moist. There may be dyspnea and heartache and at times pains of an anginal nature. Most patients seek the recumbent position. The blood pressure is low and the heart is usually smaller than normal because of the shortened period of filling in diastole. With a very rapid heart rate the brain may receive little blood and faintness, dizziness and even syncope may ensue. In extreme cases the condition may simulate the Stokes-Adams' syndrome. As the attack progresses there may be flatulence, nausea and vomiting. In rare instances where the tachycardia is greatly prolonged, the heart dilates, symptoms of congestive heart failure follow and may result in death. In a vast majority of the cases the paroxysmal tachycardia terminates abruptly, followed by a pause, and the first beat of normal rhythm produces a "thump" in the chest. At times a few extrasystoles follow the "off set." At once there is a sense of relief and most of the symptoms rapidly disappear. Often there is an increased output of urine of low specific gravity at this stage. This is an important observation and may be an aid in arriving at a diagnosis from history if the patient is not seen in an attack.

Ventricular paroxysmal tachycardia is found usually, but not always, associated with some serious cardiac disorder, frequently coronary disease. It is usually fatal if the electrocardiogram shows alternating direction of the ventricular complexes. Marvin³ reported five cases of this type due to digitalis intoxication all of which died. Major and Wahl⁴ reported a case of ventricular paroxysmal tachycardia associated with focal myocarditis from infected

tonsils and teeth. The prognostic significance of paroxysmal ventricular tachycardia makes its recognition extremely important. It is to be differentiated from the relatively benign auricular type. Positive differentiation is usually dependent upon the electrocardiogram. Levine⁵ has emphasized certain clinical signs that aid in bedside diagnosis. In paroxysmal tachycardia of ventricular origin there are slight irregularities in the rapid heart rhythm, a changing quality and intensity of the first heart sound as heard at the apex, and a failure to produce any effect upon the tachycardia by pressure upon the vagus or upon the eyeballs as frequently seen in the auricular tachycardias.

Paroxysmal tachycardia is to be differentiated from sino-auricular tachycardia, auricular flutter and auricular fibrillation. Its regular rapid rate (100 to 200 and usually 160 to 180), sudden onset and termination, relatively short duration and no auriculoventricular block, distinguish it from these other arrhythmias.

Extrasystoles in themselves usually demand no treatment. If there is infection, intoxication, cardiac disease or other illness, treatment should be directed toward that disease and the premature contractions disregarded unless symptoms are especially severe. That premature beats may be directly traceable to some toxic substance like alcohol, tobacco, or digitalis, should be emphasized and their reduction or omission may eliminate the arrhythmia. The patient should be carefully reassured of their significance. Reassurance is frequently not sufficient treatment for the patient. Extrasystoles that appear of little clinical significance to the physician may be of the greatest importance to the patient. He is heart conscious, fearful, distinctly annoyed and uncomfortable. He wants them stopped. There is the case of the man who considerably shortened a European tour because of them. He came home to die. They were stopped by quinidine. If reassurance is not effective and symptoms are of sufficient severity, drugs may be tried. Sedatives, as bromides or luminal and quinidine sulphate, three grains two or three times a day, may control the arrhythmia. Although digitalis is sometimes given for extrasystoles, a warning must be given. Extrasystoles frequently result from digitalis therapy. If they are associated with early heart failure, rest and digitalis may cause them to disappear.

There is no effective single method that can be employed in stopping an attack of paroxysmal tachycardia. Many attacks terminate spontaneously and the physician is given credit for the cure. However, the credit is frequently rightfully given to the clever physician who

comes with a "bagful of tricks." A methodical program should be employed. The patient should be quiet, seated or recumbent, because most attacks are shorter during rest although some are abolished by exercise. Certain postures are sometimes effective; for example, leaning forward in a chair with the head low, or lying down with the head lower than the rest of the body. After the patient has assumed the most satisfactory position, pressure on the vagus may be tried, first over the right carotid and then over the left carotid. Pressure on either eyeball with the eyes closed (oculocardiac reflex method) may be tried. Pressure methods are effective in about 10 per cent of cases. Other mechanical and reflex methods, the induction of vomiting, firm abdominal pressure, application of ice bag to precordium, etc., are sometimes effective. Sedatives, for example bromides and morphine, may be given. Digitalis, strophanthus and adrenalin have been used but they are of doubtful value. Quinidine sulphate is probably the most effective drug. It may be given either in the tablet or powdered form, first as a test dose of three grains and followed in an hour by six grains which may be repeated every two or three hours.

The treatment of paroxysmal tachycardia of ventricular origin is unsatisfactory. It should be remembered that toxic doses of digitalis may cause this arrhythmia. Since coronary disease is so frequently present when this arrhythmia occurs the general measures for coronary occlusion should be instituted. Digitalis may be tried but is of uncertain value and attended with some danger. Quinidine sulphate has been given with some degree of success but the dosage required may be very great.

934 Argyle Building.

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FATAL FUSOSPIROCHETAL ANGINA

Leon Goldman, Cincinnati, and Herman E. Kully, Omaha (*Journal A. M. A.*, July 29, 1933), state that the seven patients dying with a fusospirochetal angina were adult Negroes from among twenty-one patients (52 per cent Negroes) admitted for a fusospirochetal angina to the Cincinnati General Hospital during the period 1929-1932. When extensive ulceration has occurred, the hopelessness of all forms of therapy is evident. The secondary or associated factor of fusospirochetal angina is of frequent occurrence.

TREATMENT OF THE CARDIAC EPISODES OF MIDDLE LIFE

O. P. J. FALK, M.D.

ST. LOUIS

Mortality and morbidity statistics for the registration area in America clearly indicate the increasing significance of heart disease which now stands first as the cause of death. Furthermore, the mounting incidence of heart disease during the last two decades occurs in individuals past forty years of age.

In the state of New York where there was a continuous rise in cardiac deaths from 133 per 100,000 in 1900 to 280 in 1928, 51 per cent of the cardiac deaths were between the ages of forty and seventy and only 8 per cent under forty. The most frequent causes of heart disease after forty are factors associated with vascular deterioration such as coronary arteriosclerosis and chronic myocardial disease, so frequently associated with vascular hypertension.

Of 3142 deaths among members of the A. M. A. last year, the average age was 64.1 years and one third, or 1101, were attributable to heart disease. In 1931 heart disease accounted for 1065 out of 2952 deaths, also one third. In 1932 this rate was approximately five times that for cancer and four times the pneumonia rate. William Mayo ascribes the increasing incidence of heart disease among physicians to their high tension and sedentary lives. Irregularity of sleep and rest and the apparent lost art of quiet relaxation are probably further contributing factors. We must also realize that because of medical progress an increasing number of people are being enabled to live to the age of cardiovascular deterioration. Fifty years ago the life expectancy in America was forty-five years. In 1911 it was fifty-two years and to today it has increased to nearly fifty-nine.

The most frequent types of middle life cardiovascular disease coming to the attention of the clinician for diagnosis and treatment are chronic myocardial insufficiency and the coronary syndrome, in its various manifestations.

Chronic myocardial insufficiency is considered as synonymous with the "chronic non-valvular heart disease" of Christian, and the term "myocardosis" of Hyman and Personnet. The term "chronic myocarditis," still frequently employed, is clinically inadequate and pathologically inconsistent, as the word myocarditis suggests a background of some inflammatory

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From the Medical Department of St. Louis University School of Medicine.

change, as might be seen accompanying or following an acute or subacute infectious disease or toxic process. It is not rational to apply this term to a myocardium which has become insufficient after years of functional overstrain from hypertension or from impaired coronary circulation and consequent nutritional disturbance.

Presented with a clinical picture of developing cardiac decompensation in an individual during or past middle life in pre-existent good health, the practitioner is frequently confronted with the paradox of totally inadequate physical findings to account for a definite cardiac symptomatology. He realizes how totally deficient are the time honored traditional criteria of heart disease, such as murmurs, thrills, pulse irregularities, and the like, to account for his patient's subjective expression. This situation has emphasized two developments of outstanding significance in present day cardiology: (1) The importance of analyzing the early subjective expression of organic heart disease, and (2) the recognition of certain *reliable* objective criteria which designate the diseased heart.

Among the earliest subjective expressions of myocardial insufficiency, before the onset of even the earliest congestive phenomena, are such indefinite and often misinterpreted symptoms as epigastric fullness and discomfort after meals, usually ascribed to indigestion; a persistent cough, expressive of early pulmonary congestion posing as a chronic bronchitis; a very slight effort dyspnea not fully appreciated by the patient and described as general fatigability and ready exhaustion. Perhaps a nocturia due to early occult edema may be misinterpreted as due to prostatic irritation, or paroxysmal nocturnal dyspnea may be attributed to asthma. It is in these early stages before any striking objective evidence of congestive failure has developed that most can be done for the patient not only in relieving symptoms but in prolonging life.

Tactful adjustment of the patient's mental and physical activity to within limits of his cardiac capacity; avoidance of stress and strain; insistence upon adequate rest and quiet recreation; attention to the size of meals as well as to their type, and the avoidance of physical exertion after eating are all important measures. Sedatives for the hypertensive and the emotionally unstable are often essential. The control of obesity or other metabolic disorders such as thyroid and diabetic states, often helps materially to forestall and delay the tragic sequelae of middle age heart disease.

Of the earlier objective signs of myocardial disease of middle life cardiac enlargement is the most consistent and reliable. In the absence of

antecedent valvular disease these cases are usually associated with hypertension.

Christian¹ has recently advocated long continued use of digitalis in this type of chronic cardiac disease, particularly when associated with hypertrophy in individuals past middle life, with the idea of delaying the onset of the eventual insufficiency, because he feels that every hypertrophied heart is on its way to eventual failure. Along with reduction in physical exertion he advises the use of .1 to .15 gram of digitalis leaves twice daily, unless that amount causes toxic symptoms. Clinical experience has impressed us with the advantage of keeping cases that have *already* shown a break in compensation on a daily ration indefinitely, and the suggestion of Christian goes a step further in advocating digitalis even before decompensation has taken place in order to ward it off. He believes such a course inhibits the progress of cardiac hypertrophy and retards somewhat the aging process in the myocardium. We have not felt justified in adopting this procedure as a routine measure in our cases.

The therapeutic management of myocardial insufficiency with varying grades of congestive failure, include the following measures:

1. *Rest.*—Insistence upon adequate rest in bed, twenty-four hours of the day, is probably the most important feature of successful treatment. This entails an opiate (hypodermically by preference) for the relief of dyspnea and induction of sleep during the first few days of treatment, and the use of sedatives such as phenobarbital for the control of motor restlessness and mental disquietude when present during the course of treatment. Rest also entails comfortable postural states with back and head properly elevated and feet supported. The only occasion for leaving the bed should be for bowel movement, using an adjacent chair commode. A bottle should be used for urination. Adequate rest also necessitates relative silence and freedom from visitors. Occasionally the use of an arm chair will be found far more comfortable and restful, though this should be discouraged when possible. Such obvious details are often overlooked and yet are so essential toward procuring proper rest and sleep.

2. *Dietary Measures.*—In all stages of congestive failure with edema the limitation of fluids to a liter or less per day is important until diuresis sets in, whereupon the fluid intake may be increased to 1200 or 1500 c.c. This is an important feature, for any considerable additional intake of fluids may delay the essential diuretic response. Because the Karell diet of 800 c.c. of milk daily does not supply sufficient

energy, we are in the habit of adding milk sugar to the milk and also substituting one half the milk allowance for dextrose lemonade. We find that a palatable drink can be made by adding 60 grams of powdered dextrose and the juice of two lemons to 400 c.c. of cold water. After the patient begins to recover compensation we strive to give 100 to 200 grams of dextrose per day by the use of dextrose lemonade and adding powdered dextrose freely to cereals, fruit juices and light desserts. A generous allowance of carbohydrates has been shown to have a salutary effect on cases of myocardial disease, and as dextrose is the most readily available carbohydrate its use is not only fundamentally sound but quite efficacious in practice. Smith, Gibson, and Ross² have shown that a high carbohydrate diet augments the effect of drug therapy in cardiac decompensation.

When diabetes complicates the picture dextrose intake may have to be modified or countered with insulin. It is quite important to minimize insulin dosage because of the distinct cardiac hazard involved by insulin produced hypoglycemia. Strouse, Soskin and Katz³ call attention to the harmful effects sometimes following rapid lowering of blood sugar in diabetics with cardiovascular disease. Anginal attacks and even coronary thrombosis have followed large doses of insulin. It is best not to maintain the blood sugar at a lower level than that to which the patient has been accustomed. This caution applies to all arteriosclerotic diabetics, even before the onset of any definite clinical cardiac episode.

After convalescence has been established as well as in the management of threatened myocardial failure, complicated as it often is by hypertension in the middle aged, certain dietary rules must naturally be insisted upon. Unfortunately, the idea still persists that proteins should be rigidly curtailed in hypertension with albuminuria, when actually a moderately generous protein intake helps to maintain myocardial efficiency and oftentimes minimizes the tendency to edema by helping to maintain an adequate plasma protein level. Unfortunately, as the older concept of the renal origin of hypertension still survives, the diagnosis and treatment in such cases often result in early heart failure being neglected because the dropsy and albuminuria are interpreted as Bright's disease instead of chronic passive congestion from heart disease. Protein is often misconstrued to be harmful, in the form of red meat particularly, although it actually has no effect upon the organism different from white meat or fish. Even eggs are given sparingly and salt restricted to the point of producing anorexia, all of which is

unnecessary in the treatment of early myocardial insufficiency associated with hypertensive disease. Of far greater importance is restriction of the size of the meal, insistence upon slow and deliberate eating, and one hour of physical quiet following the principal meal of the day. Dietary regulation should be on a quantitative basis, particularly when associated with obesity, as well as involving a qualitative restriction of the very bulky foods and the more indigestible types of pastries and fried foods. Adequate mineral salts and vitamins can be assured by dairy products, fresh fruits and vegetables of the more digestible types taken daily.

Caffeine drinks should be prohibited and the use of tobacco either limited or entirely forbidden in the presence of the anginal syndrome. Alcohol in moderate quantities is occasionally a source of comfort and relaxation in cases where its abuse is unlikely, but in general is best curtailed.

3. *Elimination*.—Brisk saline purgation was formerly considered desirable in cases of congestive heart failure with edema. There is very little evidence in favor of this view and we are inclined to believe that any more than a daily easy bowel movement may constitute an actual handicap because of the physical effort entailed.

The use of diuretics is the most important method for the elimination of cardiac edema not controlled by rest, fluid restriction and adequate digitalization. The xanthine diuretics (which are also coronary dilators) such as theophylline salts, 3 to 5 grains, or theobromine salts, 7 to 15 grains, four times daily, are indicated for three to four days. If these are ineffective the mercurial diuretic salyrgan, 1 to 2 c.c. intravenously, should be given every three days as necessary, combined with the acid producing salts ammonium chloride or ammonium nitrate, 6 to 10 grams daily. This latter combination is so effective that its use is indicated even earlier when edema is so marked as to constitute a serious mechanical handicap in itself. With this treatment paracentesis of the chest or abdomen is rarely necessary.

We also advocate the use of oxygen, preferably through a small tent, for persistent dyspnea or severe cyanosis. On rare occasions the removal of a pint of blood in the presence of critical right heart failure, with its accompanying cyanosis, dyspnea, great distention of the veins of the neck and large pulsating liver, may be life saving. As to the most effective stimulant for impending cardiac failure of any type, we have found the intravenous injection of an ampoule of 50 per cent glucose plus 7 grains of caffeine-sodiobenzoate, or an ampoule of coramine, a most valuable measure. It is doubtful whether

the intramuscular injection of a few c.c. of digitalis can produce prompt enough results to avert a fatal crisis, and modern therapeutics is agreed upon the uselessness of strychnine under these conditions. Analysis of many cardiovascular failure episodes indicates that they are sometimes due to a vasomotor collapse rather than primary cardiac failure, in which case the use of adrenalin is justified, and here strychnia may be helpful.

4. *The Proper Administration of Digitalis.*—This is a feature of tremendous importance in the treatment of any type of congestive heart failure and is not in any way influenced by the presence or absence of hypertension. We feel that the present tendency toward using digitalis in capsule or pill form is a distinct advance, in that it standardizes dosage more accurately than the haphazard method of drop dosage, because it is recognized that 15 drops of the tincture usually means but seven or less actual minims. In this way many cases in the past have been under digitalized. It must be remembered that portal congestion can frequently give rise to nausea and vomiting in which case digitalis may have to be pushed rather than curtailed. The use of 4 c.c. of the tincture in 3 ounces of water per rectum once or twice a day, or 2 c.c. of digalen intramuscularly three or four times a day, must necessarily supplant oral administration in this type of case. Actual contraindications to digitalis include the following conditions: (1) Nausea, vomiting or occasional diarrhea when not due to other causes; (2) in acute stages of coronary thrombosis up until after the first week of recovery and then only in the presence of manifest myocardial insufficiency (dyspnea or congestive phenomena) or in the presence of persistent auricular fibrillation; (3) pulse at the apex under 60, or sudden pauses indicating a degree of block; (4) the presence of delirium, particularly of the visual type; (5) the occurrence of runs of premature systoles or a developing coupled beat in a previously regular heart under intensive digitalis therapy.

Adequate digitalization entails the use of about 30 grains of standardized powdered leaf, or about 300 measured minims of the tincture, during the first few days of the average decompensation episode without immediately previous digitalis intake. The size of the patient naturally alters the amount but the average case will need about four $1\frac{1}{2}$ grain capsules or pills, four times a day, for four to five days in order to attain any adequate digitalis effect, followed by a daily maintenance dose of one or two a day.

The Coronary Syndrome.—The clinical manifestations of coronary sclerosis constitute the

coronary syndrome. They may vary from vague, indefinite sensory symptoms to a classical Heberden's angina pectoris, or to a frank coronary thrombosis with myocardial infarction. Furthermore, coronary arteriosclerosis nearly always occurs and is often an important factor in hypertensive heart failure, in which case the clinical picture is usually one of myocardial insufficiency, often associated however with anginal or occlusion phenomena.

The coronary arteries become thickened and hardened with advancing years. The delicate intimal lining becomes roughened and scarred and the lumen narrowed. If the process goes no further we may have chronic incomplete coronary occlusion with gradual development of compensatory collateral channels through arterial anastomoses, or even by the thebesian vessels, in older subjects. Such a case may be entirely asymptomatic or may complain of vague, indefinite substernal distress, mild anginal symptoms, progressive effort dyspnea, or attacks of nocturnal dyspnea. Should thrombosis at the site of some intimal constriction or ulceration take place complete occlusion ensues with the myocardial infarction so frequently fatal. The cases that survive the initial attack, coming on with severe angina-like pain, must be distinguished from angina pectoris which is generally conceded to be caused by an inability of the sclerosed coronary vessel to dilate apace with the increased myocardial demand occasioned by some exertional effort on the part of the patient. This gives rise to a transient myocardial ischemia but without the permanent occlusion that occurs in thrombosis. In contrast with the prolonged nature of thrombosis an attack of angina lasts but a few minutes. Angina actually *terminates* some stress or strain, whereas thrombosis frequently occurs at rest or perhaps some time *after* exceptional effort in an anginal patient. Fitzhugh and Hamilton,⁴ in an analysis of significant events preceding 100 fatal occurrences of angina and coronary thrombosis in anginal patients found 31 had indulged in unusual physical exertion and 44 had become unusually fatigued from exertion or loss of sleep. A series such as this should make us realize that perhaps some of these fatal attacks might be preventable or at least deferrable. A fatalistic attitude toward this syndrome is held by some physicians, a state of mind anything but justified in the present state of our knowledge. A carefully regulated regimen of living with appropriate treatment should be quite useful in avoiding or postponing coronary occlusion or fatal anginal attacks in the anginal subject.

Treatment of the Anginal and Coronary Episodes.—Treatment of the anginal syndrome in-

cludes the following measures: For the attack, 1/100 grain of nitroglycerin under the tongue or inhalation of amyl nitrite are of course the most effective measures. Rarely is morphine necessary and when it is one should immediately suspect coronary occlusion.

In the interval between attacks, control of exertion, particularly after meals, the elimination of mental stress, the lessening of responsibility, the minimizing of worries and the reduction of hours of work are all imperative. The avoidance of caffeine and tobacco seems justified though alcohol can sometimes be allowed in moderation. Elimination of easily removable foci of infection has apparently been helpful in several cases under my observation, but inasmuch as infection is probably not a primary causative factor the more difficult procedures, such as tonsillectomy in an obese adult, are usually contraindicated in the presence of anginal disease. On the other hand, removal of a few infected teeth or treatment of an infected sinus or prostate should be carried out, occasionally with signal benefit.

Of whatever benefit drugs may be the most consistent good effects seem to follow the use of iodides and some of the xanthine products, such as theobromine and theophylline salts. After all, it is the mode of living rather than the use of drugs that influences most the relief and prognosis of the anginal syndrome.

The Management of Coronary Thrombosis.—The onset of an acute attack calls for relief of the agonizing pain as soon as possible. Adequate initial dosage of $\frac{1}{4}$ to $\frac{1}{2}$ grain of morphine hypodermically, to be repeated as often as every 20 to 40 minutes should relief be delayed. Thus is shock minimized and myocardial infarction better borne. Once the diagnosis of coronary occlusion has been decided upon all thought of such vasodilators as nitroglycerin or amyl nitrite should be put aside. Many of the patients, having had previous attacks of angina, have already sought but in vain, the accustomed relief from these drugs before we see them. They are probably actually harmful as the fall in blood pressure thereby produced may aggravate an attack of thrombosis. The less the patient is moved, undressed and examined, the better for his welfare during the first few hours of recovery. Curtailment of speaking effort is, of course, mandatory.

Occasionally adrenalin in extreme collapse and ensuing unconsciousness, is indicated; but for moderate states of impending circulatory collapse we have found the intravenous injection of from 25 to 50 c.c. of 50 per cent glucose, with the addition of caffeine sodiobenzoate, or coramine, to be an effectively prompt and sus-

taining source of stimulation. The glucose can be repeated as circumstances demand. Because of the associated shock, the skin should be kept warm and fluids given freely as the patients perspire profusely. The diet should be liquid for several days with 100 grams of dextrose daily with fruit juices, which constitute a source of readily available carbohydrates for cardiac support. Oxygen inhalations, in the event of much dyspnea or cyanosis are frequently of value. Kilgore⁵ has recently advised its use for the relief of pain in the acute stages. Digitalis is probably best avoided in the early stages of recovery and should not be used until the end of the first week and then only when evidence of residual myocardial insufficiency or auricular fibrillation persists a week or so after the onset of the episode.

Toward the end of the first week we give one of the xanthine derivatives, such as theophyllin ethylene diamine (metaphyllin) 3 grains, three times daily, because of its probable favorable effect upon coronary circulation, combined with $\frac{3}{8}$ grain of phenobarbital.

We advise against the attempt to overcome constipation in the early days of recovery incidental to the necessary morphine, except by the use of a colon tube to expel gas or a small enema. In fact, every effort must be centered upon promoting absolute physical and mental quietude during this critical period. Four to six weeks' rest in bed is imperative, after which a very gradual resumption of activity is permitted over a period of two more weeks, with such rigid restrictions of mental and physical activities as the individual case requires. Long hours of rest at night as well as a rest period in the course of the day are imperative, as are correction of overweight and unfavorable habits of eating, drinking or smoking. Emotional outbursts must be especially avoided.

In the event of diabetes complicating the picture, insulin had better be avoided for several weeks because of the danger to the heart as discussed under treatment of myocardial disease.

The rare development of heart block with Stokes-Adams' syndrome with syncope and halving of the pulse in the course of recovery, is a serious complication best treated by adrenalin hypodermically.

An occasional complication is paroxysmal ventricular tachycardia expressing itself by a rate of 160 to 200 which although showing interruptions is much more regular than the more frequently encountered auricular fibrillation. Quinidin, 5 to 10 grains every four hours until the rate slows down, is the most effective treatment of this complication. Levine⁶ advocates the routine use of 3 grains of quinidin two or

three times per day in the early days of recovery to prevent the onset of ventricular tachycardia.

A word about the milder episodes of coronary occlusion; even more frequently seen than the severe attacks and often unrecognized, viz.: *We must remember that any unusual circumstance involving the cardiac mechanism in a person past middle life without antecedent cardiac history, particularly when it comes on suddenly, is apt to be coronary in character and should be considered as such until proven to the contrary.* Of course this broad description will include such conditions as early myocardial episodes and anginal seizures. But any cardiac symptom not explained thereby, tending to persist or recur and followed by exhaustion, debility or perhaps a consistently lowered blood pressure, a striking change in rhythm or a suddenly lowered level of cardiac efficiency, is quite likely based upon at least some minor degree of occlusion. The relative frequency with which evidence of coronary occlusion is found in post-mortem studies seems to justify this statement. Barnes and Ball⁷ in an analysis of 1000 consecutive postmortems in death from all causes found in 685 of the cases over forty years of age an incidence of nearly 7 per cent recent or remote occlusion.

We feel that effective therapeutic management of cardiovascular disease of middle life must include careful consideration of the following triad of factors: (1) The influence of the patient's constitutional type and heredity; (2) the effect of his environment and habits of living; (3) the exact type and morbid tendency of the disease process itself and its relation to any associated constitutional disorder.

3720 Washington Avenue.

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UNUSUAL HEMATOLOGIC REACTION TO NEOARSPHENAMINE

Murray L. Rich, Cincinnati (Journal A. M. A., Oct. 14, 1933), reports a case of acute thrombocytopenic purpura in which a smear taken three hours following an injection of neoarsphenamine showed, in addition to the thrombocytopenia, the presence of numerous degenerated neutrophilic cells. There was also evidence of intense marrow stimulation.

RENAL COMPLICATIONS OF GALLSTONE DISEASE

WILLARD BARTLETT, JR., M.D.

ST. LOUIS

I wish to start with a brief summary of the important findings in nine cases of gallstone disease which have shown evidence of kidney damage amounting, in certain of them, to acute nephritis and suppression of urine. The details of these cases are being reported in another paper and I shall mention only those points in each which indicate the diagnosis, treatment and outcome.

REPORT OF CASES

Case 1. A woman, aged 57, who had been jaundiced recently, entered the hospital with suppression of urine, increase in blood nitrogen and positive urine of low specific gravity; she did not develop edema, but marked diuresis followed cholecystostomy and recovery. On second admission her hypertension was improved and she excreted microscopically normal urine of higher specific gravity. She then withstood cholecystectomy and made an uneventful recovery.

Case 2. A woman, aged 58, was jaundiced on admission to the hospital and had suppression of urine, nitrogen retention, increasing blood pressure, edema and positive urine of low specific gravity. She died in less than 48 hours without operation being regarded as an impossible risk from the start.

Case 3. A woman, aged 71, jaundiced, entered the hospital with 42 per cent retention of iso-iodokon in 30 minutes showing liver failure. Operation was delayed with the hope that liver function would improve but after several days she developed suppression of urine, nitrogen retention, edema and had positive urinary findings in the small amounts excreted before death. She maintained a slow pulse and low blood pressure.

Case 4. A man, aged 53, was known to have had normal urine and normal phthalein excretion 2 months previous to admission. He entered jaundiced, with suppression of urine, nitrogen retention, positive urine and edema. He was in coma when I first saw him in consultation and he died 24 hours later.

Case 5. A woman, aged 63, never jaundiced, entered with empyema of the gallbladder, suppression of urine, positive urinary findings and slight hypertension but no retention of nitrogen. Cholecystostomy was done following which urine output increased and convalescence was normal until pneumonia set in on the eleventh day and death ensued.

Case 6. A man, aged 70, never jaundiced, admitted in an acute attack of cholecystitis, with positive urine, nitrogen retention and no phthalein excretion in one hour at first test. Output of urine was not recorded. Urine function improved as the attack subsided and permanent cholecystostomy was advised, in view of his age. Recovery was uneventful.

Case 7. A woman, aged 37, recently jaundiced, entered in a subsiding attack of cholecystitis. Her urine did not go above a specific gravity of 1.014 and phthalein excretion did not rise above 37 per cent in the first 10 days. Preliminary cholecystostomy was

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done and 4 months later she returned for cholecystectomy, phthalein excretion being then 53 per cent. The second operation was well withstood but a hypertension has since developed.

Case 8. A man, aged 71, with subsiding obstructive jaundice, was seen in consultation and because the patient was gradually improving further delay before operation was counseled. Shortly after this the patient had a chill and developed suppression of urine. Immediate cholecystostomy was advised and performed by his surgeon. The urinary output rose rapidly after operation and the patient's condition was entirely satisfactory on the second postoperative day when he suddenly became cyanotic and died within 5 minutes, evidently of pulmonary embolism.

Case 9. A woman, aged 61, with subsiding jaundice, was admitted to the hospital with positive urine and nitrogen retention. These disappeared on treatment and cholecystectomy and exploration of the common duct were carried out. One week later blocking of internal bile drainage occurred and jaundice returned. Simultaneously moderate suppression of urine, nitrogen retention and positive urine findings appeared. Death ensued on the fourteenth day.

The occurrence of almost total anuria for 72 hours in case 1 called my attention so forcibly to this complication that I have routinely estimated the physiological and functional status of the kidneys in nearly all cases of gallstone disease in the practice of my father and myself since that time. The first 8 cases listed occurred in a series of 70 consecutive patients with infections of the biliary tract; case 9 was found by looking back a few months in the records previous to the appearance of case 1. The incidence of over 11 per cent of this complication convinces me that it must be far more common than the meager literature on the subject would indicate and that its importance as a common sequela of acute infection in the gallbladder and extrahepatic bile ducts is not appreciated.

Only 8 cases have been reported in the German literature. In this country Walters and Parham reported 2 cases in 1922 and Helwig and Schutz have recently added 6 cases of their own, the largest previous series. The prevailing opinion has been that damage to liver cells allows toxins which would ordinarily be neutralized in the liver to pass to the kidneys and there to cause secondary renal injury. The role played by jaundice as an additional kidney irritant has usually been emphasized also. On the contrary, all the evidence it seems to me points to the infection in the bile passages acting as a direct irritant to kidney parenchyma, particularly the tubules, precisely as may occur in severe infections elsewhere in the body, as in scarlatina, for example. Critical examination of all the cases in the literature reveals the factor of acuteness of infection as almost constant. This was overlooked, though the published evidence is there, by Wilensky and by

Helwig and Schutz. Jaundice is inconstant in the reported cases and is therefore not a necessary, though it may well be an accessory, causative agent. Contrary to previous thought, this complication can be detected in its incipency by functional kidney tests. Here again, Helwig and Schutz have fallen into an error in assuming that kidney function was normal in their patients because the blood nonprotein nitrogen was not elevated previously to the development of anuria. The fact is that a diminishing renal function is first shown by decreasing ability to concentrate (Newburgh, Wakefield), then by falling phthalein excretion and only finally by nitrogen retention. The supposition, therefore, that the kidney reserve has not been seriously encroached upon because blood nonprotein nitrogen is normal and phthalein excretion is not diminished in entirely unwarranted. There is still some controversy as to the value of phthalein excretion in cases in which considerable liver damage is present. Of the many authors writing on this question, only Hanner and Whipple have described an increased output of phthalein in the urine in the presence of a failing liver. My own clinical experience leads to no such conclusion.

Attempts to reproduce the clinical picture of nephritis and anuria in the experimental animal have never been clearly productive. Clairmont and von Haberer and, later, Wangenstein ligated the common bile duct in the dog; Wangenstein also gave repeated anesthetic doses of ether and chloroform; none of these experiments was successful and the authors concluded that the dog was an unsuitable animal for the purpose. In the vast and exhaustive research on the liver and its ducts by Mann and others in the Mayo Clinic, nephritis has not been produced in the dog as a sequela of liver damage. Nor did Hanner and Whipple cause nephritis by poisoning the liver of the dog with phosphorus or chloroform and by producing obstructive jaundice. Helwig and Schutz attacked the problem in a different way by traumatizing the livers of rabbits in an effort to show nephritis secondary to hepatitis. They succeeded in some cases, but this experimental method does not in any sense reproduce clinical conditions. It is well known that sterile autolysis of tissue produces toxins that cause nephritis, as in burns and in acute pancreatitis with fat necrosis; so that the effects on the kidneys described by Helwig and Schutz are not specific for liver tissue. I may say lastly of these experimental efforts that animal experiments can be transferred to man only with the greatest caution.

It is not possible, of course, to carry out urine concentration tests involving the withdrawal of

fluids for any considerable length of time on acutely sick patients and we have limited the use of these tests to patients who are safely out of an exacerbation. The excretion of phthalein is more useful in acute cases although, as has been said, it gives less information about kidney reserve. In the presence of jaundice it may be quite impossible to get an accurate color match with the standard by any of the methods described. The microscopic and chemical examination of the urine is, of course, of fundamental importance but it must be remembered that renal insufficiency may occasionally be impending with practically normal urine. Particularly where measures of progress are desired, it is essential that the same technic be followed scrupulously in all tests as it is simply guesswork to try to compare results if phthalein is injected intramuscularly at one time and the specimens collected in an hour whereas at another time the specimens are collected two hours after intravenous injection.

I have recently been attempting to find out whether or not the kidneys could be forced to give a fair indication of their reserve by withdrawing fluids and food for a shorter period than that used in metabolism wards where conditions as well as patients can be controlled more readily than in private practice. The routine of the 15 hour test which I have carried out on 23 patients is as follows: (1) Omit all food and fluid from 6 p. m. to 9 a. m.; (2) collect all urine voided from 6 p. m. to 6 a. m. as one specimen; (3) have patient void at 7 a. m., 8 a. m. and 9 a. m. and save as separate specimens, and (4) catheterize for final specimen if unable to void. This yields at least one, and usually two, morning specimens of less than two ounces. Where the specific gravity of none of these has gone higher than 1.020 there has invariably been other evidence of impaired renal function. Newburgh and Lashmet, using a 36 hour regimen, consider that a normal kidney should concentrate to 1.026 or over. Of the 23 patients of all sorts on whom to date I have carried out the 15 hour test, phthalein excretion was studied on the same day in 14. The phthalein excretion was considered low in 5 of these and in only 2 of them was the "borderline" specific gravity of 1.020 reached. There is reason to think that the test is a truly useful one since in no case so far has there been a good concentration with poor phthalein excretion, whereas good phthalein excretion with poor ability to concentrate is not uncommon.

Of our last 19 cases of gallstone disease, 12 observations by the concentration test were made; with 2 exceptions, the average of the most concentrated morning specimens was

1.028 (range 1.020 to 1.032). One patient concentrated only to 1.014 in a subsiding exacerbation with jaundice and her phthalein excretion was 65 per cent in 1 hour after intravenous injection. Another patient, an elderly hypertensive woman, concentrated to 1.018 and excreted 47 per cent of phthalein. Both withstood cholecystectomy without untoward renal sequelae. Observations on phthalein excretion one hour after intravenous injection were made in 14 of the 19 patients. In 4 of these the result was poor or only fair considering the patients' years; one patient was in an acute exacerbation, two had well-defined hypertensive cardiovascular-renal syndromes and I am unable to account for the poor excretion in the fourth. One of these patients was discharged without operation, two withstood cholecystectomy and the fourth withstood choledochostomy after considerable preparatory treatment. The 10 patients whose phthalein output was good underwent cholecystectomy or choledochostomy without trouble.

COMMENT

Since case 1 was called to our attention, acute nephritis and renal insufficiency have not occurred as postoperative events in patients with gallstone disease largely, we feel, because we have tried to estimate the functional as well as the anatomical status of the kidneys in the realization that the organs which may suffer damage as a complication of biliary infections must include not only the liver, pancreas and heart, as has often been pointed out, but also the kidneys. Its occurrence as a complication of the disease, particularly of acute exacerbations, has been recognized in over 11 per cent of our patients and impairment of renal function to a less dramatic degree has been recognized in nearly a third of the patients studied in detail most recently. Not all acute cases show evidence of renal damage and from this, as well as other data discussed, the inference seems plain to me that in those cases in which the kidneys are affected a selective action for kidney parenchyma (particularly the tubular epithelium) by the toxins of specific infecting organisms must be considered as causative. Where serious impairment of kidney reserve is shown we advocate and practice dividing the operation into stages, the first of which is cholecystostomy under local infiltration without any intra-abdominal exploration. The reason for avoiding ether where kidney function is precarious should be obvious. External biliary fistula is maintained by a mushroom (Pezzar) catheter in the gallbladder for such time (3 months to 1 year) as is required before cholecystectomy or

exploration of the common duct is carried out. Such a catheter is water-tight and may be clamped off for increasing periods so that no important inconvenience results to the patient; the overwhelming majority of our patients return to their normal occupations during the interim between stages. This recommendation is in line with the most fundamental principles of surgery in (1) doing as little as necessary to save life in gravely sick individuals, (2) providing drainage for infection and obstruction and (3) leaving radical corrective measures for a time when the patient is in comparatively good health. All the deaths in previously reported cases have occurred after radical operations designed as the final one; the only 2 deaths occurring after operation in our cases were from pulmonary complications and after kidney function had been reestablished.

In closing, I wish to call attention to the very useful plan of injecting lipiodol through the Pezzar catheter into the gallbladder or through the T-tube used for prolonged drainage of the common duct. Dr. John Young and I have carried out this in some 20 cases and feel that we get information of real value as to the presence or absence of obstruction in the extrahepatic ducts, particularly when a tube providing a "side-track" or safety-valve is to be withdrawn. We had done this in 10 cases when Overholt's article appeared in 1931.

410 Metropolitan Building.

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DISCUSSION

DR. FERDINAND HELWIG, Kansas City: I enjoyed Dr. Bartlett's paper a great deal and was pleased to hear that he is also working on the same problem that has been interesting Dr. Schutz and myself for the last four years. Dr. Bartlett spoke of our overlooking the possibility of infection as the obvious cause of kidney damage in our cases. Naturally, in those cases where the gallbladder is the prime factor it is difficult positively to rule out infection. In our case of

traumatic pulpification we found no evidence of infection and we did our best to eliminate infection in all cases by careful postmortem and antemortem blood culture and cultures from the viscera at the necropsy. If we assume that all of the kidney damage is due to infection, then we must also maintain that eclampsia is an infection. Moreover, Dieckmann produced typical eclamptic lesions in the livers of dogs by injecting fibrinogen in the portal vein, and his animals often developed kidney lesions typical of those found in eclampsia. Could this also be an infection? In some of our cases it was impossible to say that infection was not a factor in the production of the kidney lesion and sometimes certain anaerobes may be difficult to culture; so in some cases it is impossible to be absolutely certain.

In regard to experimental kidney lesions, I might say that Mann of the Mayo Clinic has noticed in his dehepatized animals a frequent coincident anuria. Haberer also observed anuria following ligation of the hepatic artery in dogs, and Furthwaengler was able to produce advanced parenchymatous degeneration of the kidneys of dogs by intravenous injections of sterile autolytic liver, while Narath obtained anuria in animals through anastomosing the portal vein and hepatic artery. Gundermann ligated the left portal vein and thus obtained atrophy of three fourths of the liver. These dogs had progressive oliguria and the urine contained albumin, casts and frequently red blood cells. Dr. Schutz and I have produced definite parenchymal change in the kidneys of dogs and rabbits following trauma to the liver as well as following ligation of the hepatic artery.

I would be very much interested in studying microscopic sections of the kidneys and livers in Dr. Bartlett's series of cases.

EFFECT OF THEELIN INJECTIONS ON THE CASTRATED WOMAN

In their experimental study with theelin on five women, August A. Werner and W. D. Collier, St. Louis (Journal A. M. A., March 4, 1933), observed that theelin restores the breasts and genital tract of women to apparently the normal sexual state after previous castration atrophy. Theelin produces changes in the atrophied endometrium of castrated women that approximate or equal the interval changes found in the normal women at the time of ovulation. Theelin does not produce the pregravid changes in the endometrium of castrated women. The bleeding from the uterus of castrated women induced by theelin occurs from an endometrium approximating or equaling in development the interval changes found in the uterus of normal women. Theelin induces bleeding from the uterus of castrated women qualitatively indistinguishable from menstruation in normal women. This bleeding from the uterus of castrated women is accompanied by the subjective symptomatology usually experienced by normal women during menstruation. Theelin relieves the subjective symptoms that occur in women following castration. The four ovariectomized women to whom the authors gave large doses of theelin stated that "libido was markedly increased." Excessive doses of theelin were given to women intramuscularly over a period of from eighty-nine to ninety-three days without seeming discomfort, until a dosage of from 6 to 8 c.c. daily was reached.

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EDUCATIONAL CAMPAIGN ON CANCER

At the Kansas City Session of the Missouri State Medical Association the Committee on Cancer presented a recommendation that an educational campaign on cancer for both lay and professional groups be inaugurated in conjunction with the Committee on Postgraduate Course and the state committee of the American Society for the Control of Cancer. The recommendation was approved by the House of Delegates and the program has been prepared and the work begun.

The Committee on Cancer and the Committee on Postgraduate Course have formulated plans for one day cancer programs wherever such programs would be effective. The state has been divided into five districts and teams have been organized in various centers of the state. These teams are composed of physicians qualified to speak before lay and professional audiences and to give dry clinics on cancer.

Each program will include a large public meeting for lay education; a dry diagnostic clinic for the benefit of the local medical profession, and a scientific program in the evening for a joint meeting with the county medical societies.

Cancer of the breast will be the topic of the programs during this year.

The state has been apportioned in groups of Councilor Districts. Dr. Floyd H. Spencer, St. Joseph, is in charge of the work in Councilor Districts 1, 2, 3, 4 and 12. Dr. Earl C. Padgett, Kansas City, has supervision of the work in Districts 11, 13, 14, 15, 16 and 17. Dr. John W. Williams, Jr., Springfield, is in charge of programs in Districts 27, 28, 29 and 31. Dr. M. Pinson Neal, Columbia, has Districts 9, 10, 18, 19 and 26. Dr. Ellis Fischel, St. Louis, has Districts 5, 6, 7, 8, 20, 21, 22, 23, 24, 25 and 30.

The Committee on Cancer is composed of

Drs. Ellis Fischel, St. Louis, chairman; Dr. Dudley A. Robnett, Columbia, and Dr. Floyd H. Spencer, St. Joseph.

The Committee on Postgraduate Course is composed of Dr. C. H. Neilson, St. Louis, chairman; Dr. J. R. McVay, Kansas City, and Dr. M. Pinson Neal, Columbia.

The first meeting will be held at Nevada, November 8, with Dr. J. T. Hornback, Nevada, Councilor of the Sixteenth District, presiding. Dr. Earl C. Padgett, Kansas City, will be in charge of the program and the speakers will be Drs. E. Kip Robinson and Ferdinand Helwig, Kansas City.

The Woman's Auxiliary through Mrs. Floyd H. Spencer, St. Joseph, chairman of the Committee on Public Relations of the Auxiliary, has volunteered to assist at these meetings by using their influence in the counties where the lectures are given to encourage a large attendance of citizens at the public meetings.

Under the guidance of the Cancer Committee and the Postgraduate Committee with the state committee of the American Society for the Control of Cancer this work is now well under way and promises to be a powerful influence in arousing an intelligent cooperation of the public with the medical profession to gain the first and the vital objective in the fight against this menace; namely, the early recognition of cancer.

To the layman this knowledge is absolutely vital. He must be warned over and over again not to postpone a visit to his physician when the early symptoms of the disease become apparent or when they are even suspected. What these early symptoms are must be told and retold and told over again. This will be done at the public meetings by the physicians who are members of our Association.

To the physician who sees few cases of cancer a knowledge of the early symptoms is absolutely essential. Therefore, he must be told and retold and told again in more technical fashion what the early symptoms are, why they point to cancer and what is the proper method of aborting or curing it.

To the physician expert in the recognition and treatment of cancer these meetings should bring renewed enthusiasm in spreading the knowledge among his patients and among his confreres who are not so well versed as he in cancer control.

We urge every member to attend these meetings and to encourage their patients and friends to attend the public meetings. The public is becoming cancer minded. They

hunger for knowledge on the subject. It is the privilege and the duty of the members of the organized medical profession—the members of the State Medical Association and the county medical societies—first to inform themselves on the signs and symptoms of the early recognition of cancer and then to pass the knowledge on to their patients on every appropriate occasion. With this intelligent cooperation of the public, of the family physician and the expert in cancer development, control and cure, the Missouri State Medical Association and every one of our members will perform a service that will reflect credit upon themselves and save many of our citizens from the physical torture and ultimate death which this age-old plague now inflicts upon them.

ST. JOSEPH SESSION, MAY 7, 8, 9, 10, 1934

The Executive Committee has fixed the dates of the St. Joseph Session for May 7, 8, 9, 10, 1934. All meetings will be held in the Crystal Room of the Robidoux Hotel and the commercial exhibits will be located on the mezzanine floor of the Robidoux.

The Executive Committee appointed Dr. W. T. Elam, St. Joseph, chairman of the General Committee on Arrangements with Dr. Spence Redman, Platte City, and Dr. A. J. Welch, Kansas City, members of the committee. This committee appointed Dr. Floyd H. Spencer, St. Joseph, as chairman of the Local Committee on Arrangements. Dr. Spencer will appoint the subcommittees as provided in the By-Laws.

The Executive Committee voted to postpone the annual meeting of the Council customarily held in November. No definite date was selected for the Council meeting.

The Executive Committee approved the plan of the Committee on Cancer in conjunction with the Committee on Postgraduate Course and the state committee of the American Society for the Control of Cancer to inaugurate an educational campaign on cancer for both the public and the medical profession.

NEW AND REORGANIZED COMPONENT SOCIETIES

Notwithstanding the general economic conditions, popularly called "the depression," the members of the Association have shown a spirit of loyalty to the organization that is extremely gratifying. To be sure, the

Association has carried quite a number of the members who are unable to pay their dues thus far and will continue to extend this courtesy until they are able to pay their dues. As the Secretary remarked in his annual report to the House of Delegates at the Kansas City Session, ". . . in these troublous times the Association has an opportunity never before offered of proving to unfortunate members that their misfortune will not bar them from membership." Not only have the members been discharging their obligations to the Association as their financial condition improves but we take much pleasure in announcing that two new societies have been organized and one has been reorganized after a period of inactivity covering a number of years.

On October 20 Lincoln County Medical Society was organized at Troy for the first time and recommended by the Councilor, Dr. B. Kurt Stumberg, St. Charles, for admittance as the component county society in Lincoln County. Dr. Stumberg with the assistance of the Assistant Secretary, Mr. Elmer H. Bartelsmeyer, perfected the organization of Lincoln County Medical Society at Troy with twelve physicians as charter members. Dr. W. P. Smith, Troy, was elected president of the Society; Dr. H. S. Harris, Troy, was elected vice president and Dr. J. J. Allevato, Winfield, was elected secretary and treasurer. The next meeting will be held at Winfield, Lincoln County, in November, when Dr. C. H. Neilson, St. Louis, will speak on "Pneumonia."

On April 5 the Dallas-Hickory-Polk County Medical Society with sixteen members was organized under the direction of Dr. Guy Titsworth, Sedalia, Councilor of the Seventeenth District, assisted by Mr. Bartelsmeyer. On recommendation of Dr. Titsworth the Dallas-Hickory-Polk County Medical Society was admitted by the House of Delegates as a component society in these three counties. Dr. A. S. Johnston, Wheatland, was elected president and Dr. J. L. Johnston, Wheatland, was elected secretary.

The reorganized Society is Perry County Medical Society which has been inactive for several years. Through the combined efforts of Dr. Geo. A. Blaylock and Dr. J. J. Bredall, Perryville, the reorganization was completed on October 11. Dr. O. A. Carron, Perryville, was elected president; Dr. W. H. Abernathy, Menfro, was elected vice president, and Dr. J. J. Bredall, Perryville, was elected secretary-treasurer.

We welcome these organizations in the

list of components of the Missouri State Medical Association and believe they will become influential factors in the promotion of the science of medicine and the protection of public health in their communities.

KANSAS CITY SOUTHWEST CLINICAL SOCIETY

The eleventh annual fall clinical conference of the Kansas City Southwest Clinical Society, held in Kansas City October 3, 4 and 5, was again successful in the value of the material presented and in the number to whom it was presented. The plan of the meeting was somewhat changed this year. The session convened for only three days and all except one session were held in the President Hotel, continuing from early morning through day and evening sessions. There were fifteen guest speakers and twenty-five members of the society appeared on the program. A fracture clinic and a clinic on anemia were held at the headquarters of the society.

Registered guests, not including guest speakers, represented Arkansas, California, Colorado, Illinois, Iowa, Kansas, Missouri, Nebraska, New Mexico, New York, Oklahoma and Texas.

The next monthly hospital clinic of the society will be held November 14 at the Bell Memorial Hospital, Kansas City, Kansas. Dr. C. F. Nelson, Lawrence, Kansas, professor of chemistry, University of Kansas, will be the guest of the society.

NEWS NOTES

Dr. P. H. Swahlen, St. Louis, was elected chairman of the executive staff of St. Ann's Hospital, St. Louis, at a staff meeting October 2. Dr. E. J. O'Malley, St. Louis, was chosen secretary.

Approximately one hundred physicians attended the thirty-second annual session of the Frisco System Medical Association in Kansas City, October 2. Dr. Jabez N. Jackson, Kansas City, president of the association, presided.

Dr. Daniel L. Sexton, St. Louis, was the guest of the Coles-Cumberland County (Illinois) Medical Society at the September meeting in Mattoon and spoke on "The Diagnosis and Treatment of Endocrine Disorders."

Surgeon L. L. Williams, Jr., medical officer in charge of malaria investigations of the United States Public Health Service, discussed the "Possible Relation of Insects to Encephalitis" at a meeting of the Academy of Science of St. Louis, October 11.

The Kansas City Tuberculosis Society observed its twenty-fifth anniversary at a dinner meeting October 4. Dr. Stuart Pritchard, Battle Creek, Michigan, president of the National Tuberculosis Association was the guest speaker and spoke on "Newer Trends in the Tuberculosis Field."

Dr. Arthur E. Strauss, St. Louis, was elected president of the St. Louis Trudeau Club at the October 5 meeting. Dr. Bryan J. McGinnis, St. Louis, was elected vice president; Dr. George S. Wilson, St. Louis, was elected secretary-treasurer, and Dr. H. I. Spector, St. Louis, chairman of the program committee.

Dr. Malvern B. Clopton, St. Louis, was elected chief of staff of St. Luke's Hospital, St. Louis, by the board of directors of the hospital October 18. Dr. Clopton succeeds the late Dr. Harvey G. Mudd who was chief of staff of St. Luke's Hospital for thirty-three years. Dr. Omar Seven, St. Louis, was re-elected assistant chief of staff and Dr. Walter Fischel, St. Louis, was reelected secretary.

We learn from the *New England Journal of Medicine* that Miss Eleanor P. Brown, secretary of the National Society for the Prevention of Blindness, has been appointed associate director of the society. Miss Regina E. Schneider, formerly secretary to Mr. Lewis H. Carris, managing director of the society, became secretary of the organization, and Mrs. Winifred Hathaway became director of educational activities.

The United States Civil Service Commission announces open competitive examination for junior medical officer (intern). Competitors will not be required to report for a written examination but will be rated on their education and experience. Applications must be on file with the United States Civil Service Commission at Washington, D. C., not later than November 15. Full information may be obtained from the Secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city, or from the United States Civil Service Commission, Washington, D. C.

The St. Louis Trudeau Club will meet November 2 at 8:15 p. m. at the St. Louis Medical Society Building. A symposium on "The Differential Diagnosis of Tuberculous Meningitis and Encephalitis" will be given. Dr. Ralph S. Muckenfuss, St. Louis, will discuss "The Etiological Differentiation"; Dr. Howard A. McCordock, St. Louis, "The Pathological Differentiation," and Dr. L. H. Hempelmann, St. Louis, "The Clinical Differentiation." Drs. Joseph F. Bredeck and Paul J. Zentay, St. Louis, will discuss the papers.

Dr. Quitman U. Newell, St. Louis, was the guest of the Texas Association of Gynecologists and Obstetricians at San Antonio, Texas, September 30. He presented a cancer clinic in the morning, an address on "Some Recent Advances in the Management of Sterility Cases" in the afternoon and an address at a banquet meeting in the evening on "Irradiation Complications in the Treatment of Uterine Cancer." On September 28 Dr. Newell addressed the Harris County (Texas) Medical Society at Houston on "The Prevention of Uterine Cancer" and on the following day presented an operative gynecological clinic at the Hermann Hospital in Houston.

The twenty-seventh annual session of the Southern Medical Association will convene in Richmond, Virginia, November 14 to 17. An informal post-meeting day in Washington on November 18 has been arranged as a part of the program. A general clinical session conducted by physicians of the host city will open the convention. On the second day there will be a general clinical session with presentations by physicians from other parts of the country. Concurrently with this general session there will be section meetings in gynecology, ophthalmology and otolaryngology, railway surgery, allergy and dermatology. The Southern Section of the Society for Experimental Biology and Medicine and the Southern Branch of the American Public Health Association will assemble concurrently on the second day. The last two days of the meeting will be occupied entirely with section meetings.

Among Missouri physicians who will appear on the program are: Drs. Herbert J. Rinkel, Hugh L. Dwyer, Nelse F. Ockerblad, and Logan Clendening, Kansas City; W. McKim Marriott, French K. Hansel, Nathan A. Womack, J. Albert Key, L. W. Dean, Lawrence T. Post, and Ralph S. Muckenfuss, St. Louis; C. E. Rice, Rolla, and Irl B. Krause, Jefferson City.

A phonetic clinical laboratory has been installed at the Central Institute for the Deaf, St. Louis. In this laboratory the deaf and others with speech defects may see a graph of the sound vibrations of their speech and compare it with pictures of normal speech. In the institute there are sixty-nine children enrolled in the grade school, sixty-seven children and adults in the speech correction department and thirty-eight adults in the lip-reading classes.

Dr. David Todd, St. Louis, president of the St. Louis Board of Education, was recently elected president of the "Better Food Control of Greater St. Louis" composed of a group of city and county officials, representatives of food companies and women prominent in civic affairs. The purpose of the organization is to encourage an educational campaign for better foods in St. Louis City and St. Louis County and to obtain the cooperation of various civic bodies in improving the quality of foodstuffs sold in the district.

Dr. Caleb A. Ritter, Kansas City, was honored by the alumni of the University Medical College of Kansas City at a dinner October 5. He graduated from the Indiana Medical College, Indianapolis, in 1877 and practiced in Indianapolis for seven years and in 1884 he moved to Kansas City. Dr. Ritter is 81 years old and has practiced in Kansas City for forty-nine years. He was an instructor at the University Medical College of Kansas City, was one of the first physicians in service at the General Hospital and one of the organizers of the maternity department of the hospital. He is an honor member of the Jackson County Medical Society.

The following speakers responded to invitations from the Postgraduate Committee of the State Association to deliver addresses at recent meetings of the component county medical societies:

Dr. Clarence A. Good, St. Joseph, was a guest at a joint meeting of the Lafayette, Johnson and Ray county medical societies at Lexington September 26. He spoke on "Encephalitis Lethargica."

The Nodaway County Medical Society had as its guests at Maryville on October 13 Drs. Paul F. Stookey and E. T. Gibson, Kansas City. Dr. Stookey spoke on "The epidemiology of Encephalitis" and Dr. Gibson spoke on "Neurological Findings in Encephalitis."

Drs. Charles H. Neilson and G. O. Broun, St. Louis, and Drs. M. Pinson Neal and Dudley A. Robnett, Columbia, were the guests

of the Ninth Councilor District at Fulton October 19. Dr. Neilson spoke on "Encephalitis" and Dr. Broun spoke on "Undulant Fever."

Seven members of the faculty of the St. Louis University School of Medicine were guests of the Adams (Illinois) County Medical Society and presented the program for the county's annual fall meeting at Quincy, Illinois, October 9. The following delivered addresses: Dr. Cyrus E. Burford, "Nephropexy and Ureterolysis as Conservative Surgery"; Dr. William T. Coughlin, "Injuries to the Brain"; Dr. Ralph A. Kinsella, "Encephalitis"; Dr. William E. Leighton, "Evolution of Spinal Cord Surgery"; Dr. LeRoy Sante, "Radiation in the Treatment of Malignant Disease"; Dr. August A. Werner, "The Sex Hormones," and the Reverend Father Alphonse M. Schwitalla, "The Report of the Committee on the Cost of Medical Care." Father Schwitalla's address was delivered at a banquet meeting closing the session.

The following articles have been accepted for New and Nonofficial Remedies:

Abbott Laboratories

Abbott's Haliver Oil, Plain

Chloriodized Rapeseed Oil

Ampules Campiodol Emulsion, 20 c.c.

Gilliland Laboratories

Staphylococcus Vaccine (Albus and Aureus)

5 c.c. vial

Adolphe Hurst & Co.

Metaphyllin

Ampules Solution Metaphyllin, 0.24 Gm., 10 c.c.

Ampules Solution Metaphyllin, 0.48 Gm., 2 c.c.

Suppositories Metaphyllin, 0.36 Gm.

Tablets Metaphyllin, 0.1 Gm.

Lederle Laboratories, Inc.

Fish Glue Allergenic Extract (Lederle)

Mead Johnson & Co.

Mead's Halibut Liver Oil

Mead's Halibut Liver Oil with Viosterol 250 D.

Parke, Davis & Co.

Parke-Davis Haliver Oil, Plain

Petrolagar Laboratories

Petrolagar (with Cascara, Non-Bitter)

Pharmedic Corporation

Aminophylline—Pharmedic

Ampules Solution Aminophylline—Pharmedic, 0.24 Gm., 10 c.c.

Ampules Solution Aminophylline—Pharmedic, 0.48 Gm., 2 c.c.

Suppositories Aminophylline—Pharmedic, 0.36 Gm.

Radium Chemical Co.

Radium Chloride—Radium Belge

G. D. Searle & Co.

Aminophylline—Searle

Ampules Solution Aminophylline—Searle, 0.24 Gm., 10 c.c.

Ampules Solution Aminophylline—Searle, 0.48 Gm., 2 c.c.

Tablets Aminophylline—Searle, 0.1 Gm. (1½ grains)

Smith, Kline & French Laboratories

Benzedrine

Benzedrine Inhaler

Benzedrine Solution

E. R. Squibb & Sons

Autolyzed Liver Concentrate—Squibb

False Ragweeds Combined Pollen Allergen Solution—Squibb (False Ragweed and Slender Ragweed in equal parts); Orachs (Shadsscale) Pollen Allergen Solution—Squibb (Shadscale, Redscale and Wingscale in equal parts); Oregon Ash Pollen Allergen Solution—Squibb; Ragweed Combined Pollen Allergen Solution—Squibb (Giant Ragweed and Dwarf Ragweed in equal parts); Rye Grasses Combined Pollen Allergen Solution—Squibb (Perennial Rye Grass and Italian Rye Grass in equal parts); Sagebrush Combined Pollen Allergen Solution—Squibb (Sagebrush and Pasture Sage in equal parts); Wormwoods Combined Pollen Allergen Solution—Squibb (Biennial Wormwood, Dragon Sagewort, Dark-leaved Mugwort, and Mugwort in equal parts)

Squibb Stabilized Refined Halibut—Liver Oil

Squibb Stabilized Refined Halibut—Liver Oil with Viosterol 250 D

OBITUARY

HARVEY SAMUEL McKAY, M.D.

The subject of this sketch was born October 1, 1878, at Auburn, Missouri, the son of the late Dr. S. R. McKay, who for many years practiced medicine in Troy, and the grandson of Dr. H. S. McKay, a well-known physician of Lincoln County prior to the war of the States. Our Dr. McKay graduated from Buchanan College in 1898, and from the Beaumont Hospital Medical College in 1901. He spent the year 1901 to 1902 as intern at Alexian Brothers' Hospital, then studied surgery in Germany, particularly with Professor Doederlein with whom he was on the most familiar footing until 1903 when he returned to St. Louis to enter practice of his profession.

Many organizations and institutions honored themselves between 1903 and 1933 by inviting him to serve on their several staffs; they are too numerous to catalog here, so mention shall be made of those professional positions only in the community which seem of particular importance. He was surgeon to the Alexian Brothers' Hospital from 1910 to 1920; he was surgeon-in-chief of St. Anthony's Hospital from the year last named up to the time of his death. At this time he was professor of surgery in the Medical School of St. Louis University having worked up through the various grades of instructor, assistant professor, and associate professor during the twenty-three preceding years. His service to the organized teaching of surgery seems to have been more especially conspicuous during the period beginning in 1922 when he was secretary to the St. Louis Clinics. He was a member of all of the general medical organizations from county to national grade and in his special field the Southern Surgical Association, the Western Surgical Association and the American College of Surgeons claimed him as a Fellow. His honorary scholastic fraternity was Alpha Omega Alpha.

The ways of providence are surely beyond understanding. For witness, the pupil is gone on before, while the teacher is left behind—his the sad privilege of trying to find words which may do justice to a quality of devotion which is given to few of us ever to experience and still more rarely consciously deserved by any of us.

My first recollection of Dr. McKay was just after his return from his postgraduate work in Europe when Dr. Schwab, who had been his teacher at the old Beaumont, called my attention to him as the most promising young man of his acquaintance desiring a surgical assistance-ship. It became thus my unforgettable privilege to have had him associated with me all of those first eight fresh years of his professional career when a strong man's interest in his work is most vivid and his capacity for service of the highest type seems almost boundless. I knew him intimately for thirty years and I never remember the time when his lively presence, his never failing smile, ready wit, sunny outlook on life and contagious enthusiasm were in any degree wanting. It is difficult to understand that a man so utterly independent in thought and word could still have been so fair minded that he was never the subject of the type of attack that leaves one defenseless and humiliated. So vivid was his personality that I seem to remember his every mannerism at the time I first knew him just as clearly as I do the events of that distinguished final public tribute paid his memory at our Lady of Lourdes and at peaceful Calvary.

A man's character is expressed by a multitude of tendencies, some of them diverse. The keynote to his was that rare quality of generosity which is perhaps best embodied in the word kindness. I suppose such forgetfulness of self as was his leads, now and then, to a man being taken advantage of; still, he must have been one of those who early learned by gratifying experience that it is more blessed to give than to receive, provided such men ever take thought at all of what is solely to their own advantage. He was eminently practical in his professional relations with his fellow men, but he surely may be said to have been without guile, if these two statements be not inconsistent with one another.

It is natural enough to associate a certain type of bravery with the quality of self-forgetfulness, but I wonder if any of us who have never been really tried have sufficient imagination to understand the courage beyond belief of men who go "over the top" with their buddies all about them and for a comparatively short time face enemy gunfire. Surely we have then no word in our language for the quality that sustains a man who with a smile faces an unconquerable foe for ten long years and all alone as our friend did. Did any of us ever find him depressed by what he well knew impended? He occasionally referred to his physical condition, but always in a lighter vein though he well knew the truth. He inherited from both his parents a tendency to arteriosclerosis with its pathological accompaniments, but during all the years his malady was developing he increased the amount of his work and the degree of his usefulness until I suppose no one in St. Louis was doing more operating or evincing more interest in his writing, his teaching and his social duties.

I always think of his life as one which might reasonably be termed well rounded. It might perhaps be compared to the finished symphony which in its classical form embraces four movements. The simile is surely true if work, play, love and religion (Cabot's choice), judiciously apportioned, are made to fill up the span allotted to him here in the flesh.

His work has been referred to; he particularly excelled as an operator though he was not lacking in other surgical attributes. Indeed, there had been fatuous moments of my own when I indulged the whim that I perhaps was privileged to have transmitted to him the inspiration given me by that incomparable technician, Bernays, in the nineties.

He excelled at play as he did at work and surely a man's avocations are an index of his versatility; a man with a variety of them fits in with any company and acquires a degree of popularity that the worker or the scholar alone

may never know. Of his diversions I suppose he was best known as a golfer; he played a game in the middle eighties or slightly better, but Jim Barnes, who taught him out at the Sunset Club, said he could have won championships with practice. He never let golf interfere with his work, though owing perhaps to his sterling Scotch ancestry he was exceptionally endowed as far as physicians go at least. He was something of a hunter, at least he took a very particular interest in quail hunting up until a couple of years ago. He was enough interested in fishing to spend his summers in Wisconsin where the gamy muskellunge bites. He took more than a passing interest in billiards and is said by those who are in a position to judge to have been one of the best half dozen players at the University Club. Day in and day out he could be seen for a few minutes after lunch indulging this pastime which, like golf, demands a high degree of coordination as a prerequisite of success. Undoubtedly his operating was the better for these pastime cultivations of muscle balance. He was a bridge enthusiast of whom his companions used to say he would rather lose than win with a doubt attached. He was thought to be, so far as skill is concerned, one of the upper half of those who played at the University Club. His reading seemed inclined toward biographies which is, I suppose, as useful a field as any other for the man who believes that history repeats itself and that coming events are predictable by him who is thoroughly conversant with today and yesterday. He was exceedingly fond of music, but never had time to cultivate this field as a performer on anything but the lighter instruments of college days. He took a very real interest in art as expressed in color. I very well remember when the years in practice began to deal increasingly kindly with him that he accumulated a collection of oil paintings distinctly more worth while than is often seen in a physician's home. Thus work and play had their day.

The part that love played in his life will never be appreciated by any who have been denied the acquaintanceship or better, the friendship, of Mrs. McKay and her daughter and the grown son just entering upon the study of medicine, representing as he does a fourth generation in the family.

As to religion, I can write but little. A man of finer sensibilities never takes others into his confidence when matters of the soul come under consideration. I believe he was a devout churchman. Surely I am not alone in this belief if one is to judge by the honors with which he was borne to his last resting place. He passed away of cerebral hemorrhage at St. Anthony's Hos-

pital just as a new day, July 22, this year, was breaking.

Some men do not ever really die—surely not so long as their personalities live in the recollection of those who have known and admired them most. The qualities of generosity, kindness, and self-forgetfulness are surely more lasting than any others, and possibly one would not go far wrong in coupling them with immortality, although this term has for the devout churchman quite another meaning.

It will go far to console those dear ones left behind that Fate was for once not wholly unkind to a very gallant gentleman. He was hard at his task, a busy and useful surgeon until a very few weeks before the end, he who for himself, would not have wished it otherwise. True, he was called at the comparatively early age of 54, but still he had crowded more of blessed service into that brief span than is granted many of us.

No higher tribute can be paid a man than this, that the writer is scarcely conscious of an effort in composing a character study of a man like Harvey; this final sketch really writes itself as I live over in retrospect these last thirty years in which his friendship was so constant and his devotion so inspiring.

For him this life is done; believe what we may of the future as we bid him farewell, we, who loved him, blindly hope that in him we have given a fresh hostage to Fate and pray that the separation may not be final.—W. B. in the *Bulletin* of the St. Louis Medical Society.

MILTON J. HOPKINS, M.D.

Dr. Milton J. Hopkins was born at Blissfield, Michigan, November 29, 1859, the youngest child in a family of eleven children. When a young man he operated a train for his older brother in Northern Michigan. Shortly afterward he had a great desire to study medicine and though his schooling in his boyhood days had been neglected he spent his leisure time studying anatomy and read medical books and attended college at Oberlin, Ohio. His great desire to study medicine led him to read a number of medical books and in his early days he went to the Indian Territory (Oklahoma) where he registered to practice medicine. He was always a great student and was unusually successful as a young doctor.

I met Dr. Hopkins when he came to St. Louis to study medicine in 1892 when we attended Missouri Medical College. During our years in college we were very closely associated in the laboratories, clinics and lecture rooms. During the last two years in college Dr. Hopkins and I

were roommates. He was a very hard working student always patient and considerate and never ceasing his investigation of a problem until he had thoroughly mastered it. I well remember the many hours we spent quizzing each other on the most difficult and important subjects.

It was not a surprise to any member of the class of sixty-four in number when Dr. Hopkins graduated with honors on March 24, 1896. After graduating he immediately located and practiced in St. Louis. He was especially fond of having his office in connection with his home where he could spend more time in serving his patients and also with his family to whom he was very devoted. While Dr. Hopkins did not have the faculty of expressing his knowledge he was an individual of action. He was a competent diagnostician and well informed on internal medicine. He deserved special credit for his careful work and accomplishments in the operating room.

For several years Dr. Hopkins spent two or three months of each year traveling through the United States by automobile with his family, visiting all points of interest.

Dr. Hopkins was especially fond of flowers and everything that is beautiful. He was a great student, having an extensive library and was especially fond of writing and composing poetry. It was a pleasure, a privilege and an honor to know one with such a loyal and congenial disposition. He never expressed any ill feeling against any one.

Dr. Hopkins was a member of the St. Louis Medical Society, Missouri State Medical Association and the American Medical Association. He died July 15, 1933. A wife, daughter, son, grandson and granddaughter survive him.—J. E. A. in the *Bulletin* of the St. Louis Medical Society.

RANDALL SOLON TILLES, M.D.

Dr. Randall S. Tilles was born in Fort Smith, Arkansas, March 8, 1883, and died suddenly at St. Louis following an operation for gallbladder disease on September 14, 1933.

Dr. Tilles received his preliminary education in Fort Smith and then attended Washington University School of Medicine where he received his medical degree in 1908. He interned at the City Hospital in 1908 and 1909. After taking postgraduate work in his favorite branch of medicine in Berlin, Paris and London during 1909 and 1910, he returned to St. Louis where he became an outstanding figure in gynecology and obstetrics.

For many years he worked at the old Jewish

Dispensary where all whom he contacted, both patients and assistants, soon learned to love him.

During the World War he enlisted in the Army Medical Corps attaining the rank of Major. After the Armistice Dr. Tilles returned to St. Louis to resume his practice.

He was on the teaching staff at St. Louis University School of Medicine until several years ago, resigning this position due to the pressure of his own practice. He was on the active staff of the Jewish Hospital where everyone who had the opportunity to work with him misses him greatly.

Dr. Tilles was a man who inspired the confidence and admiration of all who knew him. Many people in all walks of life came to him with their troubles. It was not at all unusual for him to keep his reception room filled with waiting patients while he attempted to iron out some difficulty for an old friend or acquaintance.

In his leisure moments he would play golf or read his favorite topic running mainly to history. Golf was his weakness and though he never attained great proficiency, he was very accurate and could more than hold his own with the average golfer as many of his friends can attest.

That Dr. Tilles will be missed greatly goes without saying. He was ever the friend of the young men, especially those just starting out in practice; many in his own specialty have much reason to remember him for his helpful suggestions.

To his widow and his daughter our most heartfelt sympathy goes out. Their loss is the greatest. Time alone can fill the void caused by his death.

VICTOR E. HRDLICKA, M.D.

JOHN CHRISTIAN MARTIN, M.D.

Dr. John Christian Martin was born in Campbellsburg, Kentucky, January 22, 1874, and died at his home in Kansas City, April 11, 1933. He graduated in Medicine at the University of Louisville in 1897 and came to Kansas City immediately thereafter and has been a member of this Society since 1905.

Dr. Martin located in the southeastern suburbs of the city and practiced in the same community until the day of his death, serving three generations. He did not seek scientific distinction but solely to be busy doing good. Ill health compelled him to give up a large part of his work during the last two years. He leaves a widow, Mrs. Daisy Reynolds Martin, and a brother, who is a practicing physician at Albany, Missouri. Dr. Martin was a good doctor and friend, and the profession has lost a faithful member.—From the Jackson County Medical *Journal*.

JAMES M. BILLINGS, M.D.

Dr. James M. Billings, Lebanon, a graduate of Miami Medical College, Cincinnati, Ohio, 1873, died at his home August 28 after an illness of several months. He was 89 years old.

Dr. Billings was born in Marion County, Indiana. When he was still a child his parents moved to Flora, Illinois, where he grew to manhood and began his practice. In 1881 Dr. Billings moved to Lebanon where he had remained in practice.

He helped in the organization of the Laclede County Medical Society and was ever active in promoting the success of the Society. He was president of the Society in 1925, 1929 and 1930; vice president in 1920, and secretary from 1921 to 1929. He was elected an honor member in 1925.

Dr. Billings was identified with many worthy movements in Lebanon. He was instrumental in the organization of the Lebanon Charity Association and was its first president. He served as county physician for many years and for several years as registrar of vital statistics. He was active in the Christian Church and in the Masonic lodge. He was often called Laclede County's "Good Samaritan."

He is survived by his widow, Mrs. Juliette Billings, a son and three grandchildren.

CHARLES WESLEY BURGESS, M.D.

Dr. Charles W. Burgess, Bethany, a graduate of Michigan University School of Medicine, died August 2 at his home, aged 88 years.

Dr. Burgess was a native of Maine and came to Missouri in 1867. For several years he engaged in school teaching in Livingston County and in 1884 was licensed to practice medicine. He practiced in Thomas for six years, in Blue Ridge three years and in Bethany for over twenty-five years before he retired several years ago.

He maintained his interest in organized medicine even after his retirement and was a fellow of the American Medical Association at the time of his death. He was one of the best known and most liked persons in his section of the state. Until this year his former students held reunions in Bethany annually.

He is survived by his widow, Dr. Frances E. Burgess, three sons and a daughter.

E. VICTOR WEDDING, M.D.

Dr. E. Victor Wedding, Kansas City, a graduate of Louisville Medical College, Louisville, Kentucky, 1895, died at his home at the Phillips Hotel, February 2, of heart disease. He was 58 years old.

Dr. Wedding was born in Cloverport, Ken-

tucky, and received his preliminary education at the Evansville State Normal School in Evansville, Indiana. He began practice in Kansas City immediately upon the completion of his medical education. His father, the late Dr. C. V. Wedding, aided him in the establishment of his first office.

He was a Spanish-American War veteran and served as chief medical examiner for Missouri during the draft for the World War. He was formerly a member of the staff of Research Hospital and professor of materia medica in the Medico-Chirurgical College of Kansas City. He was a charter member of the Phi Chi fraternity and a thirty-second degree Mason. He allied himself with the Jackson County Medical Society early in his career.

Surviving are a brother, two nieces and a nephew.

JOHN H. COATES, M.D.

Dr. John H. Coates, St. Louis, a graduate of Washington University School of Medicine, 1904, died at Barnes Hospital September 9 of pneumonia following an operation for appendicitis. He was 51 years old.

Dr. Coates was born in Winchester, Illinois, and went to St. Louis in his youth. He entered practice there upon the completion of his internship following his medical studies.

He was a member of the St. Louis Medical Society, and the State Association.

He is survived by his widow, Mrs. Anna M. Coates, and a sister.

HARPER MILES LARUE, M.D.

Dr. Harper M. LaRue, Kansas City, a graduate of the Kansas City Medical College, 1903, died in the United States Veterans' Hospital in Hines, Illinois, June 2, aged 56. He had been undergoing treatment for several months for the effects of gas during the World War.

Dr. LaRue was born in Dillsburg, Pennsylvania, and received his preliminary education there. He went to Kansas City in 1898 and after receiving his medical degree began practice in that city. He served for several years as police surgeon and was a physician in 1916 and 1917 in the Kansas City Health Department. Until shortly before his death Dr. LaRue maintained an office in the Argyle building.

During the World War Dr. LaRue served as captain in the medical corps from April, 1917, to May, 1919. He was wounded in 1918 while in service in Paris by the explosion of a bomb dropped by a plane.

Dr. LaRue was a loyal member of organized medicine. Surviving are three brothers and three sisters.

SOCIETY PROCEEDINGS

COUNTY SOCIETY HONOR ROLL FOR 1933

(UNDER THIS HEAD WE LIST SOCIETIES WHICH
HAVE PAID DUES FOR ALL THEIR MEMBERS)

HONOR ROLL

Mercer County Medical Society, December 10, 1932.

Moniteau County Medical Society, January 13, 1933.

Ste. Genevieve County Medical Society, January 19, 1933.

Camden County Medical Society, January 20, 1933.

Dent County Medical Society, February 1, 1933.

Chariton County Medical Society, February 10, 1933.

Webster County Medical Society, July 8, 1933.

Benton County Medical Society, August 1, 1933.

ATCHISON COUNTY MEDICAL SOCIETY

The Atchison County Medical Society held its regular summer meeting in the Masonic Lodge at Fairfax, June 28, with Dr. C. E. Benham, Tarkio, president, in the chair.

Dr. Peter T. Bohan, Kansas City, presented a very able paper on "The Use of Digitalis in Heart Disease." Dr. Bohan is a master in presenting this subject to physicians.

Dr. Thomas G. Orr, from the department of surgery, Kansas University Medical School, Kansas City, Kansas, spoke on "Treatment of Peritonitis." This paper was ably presented and the subject was handled in masterly fashion. Both papers were greatly appreciated by the Society.

Dr. M. A. Mulvania, Fairfax, and Dr. M. W. Morse, Tarkio, were elected junior members of the Society. Drs. Austin McMichael, Rockport; James A. Hunter, Fairfax; George W. Lott, Westboro, and J. W. Holliday, Tarkio, having served long and faithfully as members of the Society were elected honor members of the Society. Dr. O. P. Templeton, Fairfax, and Dr. A. Johnson, Watson, were also elected honor members of the Society. Neither had been members but both had practiced in Atchison county for more than fifty years.

Those present were Drs. Austin McMichael and W. R. Strickland, Rockport; James A. Hunter and M. A. Mulvania, Fairfax; C. D. Haskell, Charles E. Benham and M. W. Morse, Tarkio; Peter T. Bohan, Kansas City; Thomas G. Orr, Kansas City, Kansas; and J. M. Davis, O. C. Gebhart and J. F. Bullock, visitors from the Holt County Medical Society.

CHARLES E. BENHAM, M.D., Secretary.

BENTON COUNTY MEDICAL SOCIETY

The Benton County Medical Society met at Cole Camp October 5, 1933, in the directors' room of the

Peoples' Bank. The meeting was called to order by Dr. T. S. Reser, Cole Camp, vice president.

Several interesting discussions not only on professional matters but also touching upon the ethical side of the profession took place.

A clinic which was to have been held was postponed on account of lack of time due to the press of other matters.

The election of officers for the ensuing year resulted in the election of Dr. T. S. Reser, Cole Camp, president, and Dr. James A. Logan, Warsaw, secretary-treasurer (reelected).

It was unanimously voted to continue Benton County Society as before and continue to try to exert a good influence upon the commonwealth in general and the practice of medicine in particular. A short discussion was held relative to the foundation and chartering of Benton County Medical Society and it was decided that it should continue to be a pillar among the county societies for the advancement of medical science and medical fairness to the laity and the profession.

The State Secretary had reported that Benton County Medical Society is on the Honor Roll.

The Society adjourned to attend the sixtieth anniversary celebration of the founding of the Cole Camp Municipal Band and pay homage to the band and to that fine old man who for sixty years has been active in playing with the band and who was a charter member at its organization, Mr. Henry Eichhoff. More than 6000 people and sixteen bands and bugle corps took part in the celebration.

JAMES A. LOGAN, M.D., Secretary.

BOONE COUNTY MEDICAL SOCIETY

The Boone County Medical Society met at the Maples on Highway 40 September 5 with twenty-one members present.

The Society honored two of its members who have practiced medicine in Boone County for more than half a century, Dr. W. A. Norris, Columbia, and Dr. E. N. Gentry, Sturgeon, with a dinner and a fellowship meeting. After partaking of a very splendid meal the Society adjourned to the lawn where a social meeting was held.

The following members spoke: Dr. Dudley S. Conley, Columbia, commended the ethics of these two men; Dr. A. R. McComas, Sturgeon, paid a tribute to them as citizens; Dr. Carl M. Sneed, Columbia, reminisced of the past; Dr. W. A. Robinson, Sturgeon, commended them on their activities as public health officers, and Dr. Dudley A. Robnett, Columbia, spoke on the "old and new" in medicine. Many expressions of good will and words of praise were spoken by other members of the Society in appreciation of the long service of these two men in the practice of medicine.

A resolution was offered by Dr. Conley, seconded by Dr. Sneed, that each member should use his own discretion at the present time in regard to joining the NRA. Also that no member of the Society would display the NRA employers' sign in his office or car until such time as definite instructions have been received as to the code which is accepted by the American Medical Association. The resolution was unanimously adopted. It was evident that every member present was in full sympathy with the purpose and spirit of the NRA but it is difficult to apply a code

to a work so highly professional as the practice of medicine.

Dr. Nifong was asked by the secretary to report on his recent visit to St. Louis with Dr. M. P. Ravenel and Dr. M. Pinson Neal as to the encephalitis situation. Dr. Nifong spoke of the insanitary condition of the part of St. Louis County where the first cases appeared. He also spoke of the mildness of this disease in comparison with former epidemics of encephalitis. He stressed the thought that there was no ground for expecting an epidemic in Boone County and said that students were as safe in St. Louis or Columbia as elsewhere. He expressed the opinion that the way in which the epidemic was being handled was commendable.

Meeting of October 3

The Boone County Medical Society met at the Boone County Hospital with Dr. F. G. Nifong, Columbia, in the chair. Eleven members and two visitors were present.

The committee on lay projects, lay organization and lay education reported on a recommendation to the Honorable Searcy B. Pollard, mayor, and members of the city council of the City of Columbia asking for a city ordinance requiring annual immunization of dogs in the City of Columbia against rabies. The Society adopted the recommendation.

This committee reported unfavorably on the question of participation of the members in a special "industrial pictorial edition" of the Omar D. Gray publication.

The committee reported favorably on the recreational playgrounds of Columbia. The Society unanimously endorsed the committee's action.

The death of Dr. James Gordon, Columbia, was reported to the Society and the following committee was appointed by the chair to draft an appropriate resolution: Drs. Dudley S. Conley, Dudley A. Robnett and W. R. Shaefer. The resolution was adopted and a copy was mailed to Mrs. Gordon; also a copy was given to each of the newspapers and a copy sent to the Missouri State Medical Association. The resolution follows:

WHEREAS, In the death of Dr. James Gordon the Boone County Medical Society as a body and individually has lost a loyal friend, a conscientious worker and a splendid physician, and

WHEREAS, We feel that his life has been a fine example of the best that medicine represents; we have been fortunate to have known him and to have been associated with a man of such sterling character; therefore be it

Resolved, That we deeply regret his passing and we extend to his wife our sincere sympathy in her loss. Be it further

Resolved, That this expression of our sympathy be entered in the minutes of the Boone County Medical Society, a copy presented to Mrs. Gordon and copies supplied to the press.

The scientific program was interesting consisting of a round table discussion on fractures and their treatments. The subject was discussed from every angle by the following members: Drs. Frank G. Nifong, K. D. Dietrich, Dudley A. Robnett and W. J. Stewart, of Columbia; W. A. Robinson, Sturgeon, and F. W. Barden, Centralia.

S. D. SMITH, M.D., Secretary.

BUCHANAN COUNTY MEDICAL SOCIETY

The business meeting of the Buchanan County Medical Society was called to order by the president, Dr. W. H. Minton, St. Joseph, in the Missouri Methodist Hospital in St. Joseph at 8 p. m. September 20, with thirty-five present.

The application for provisional membership of Drs. Clifton Smith and Mark Underwood were read and by vote turned over to the board of censors for further consideration.

The report of the special committee appointed by the president to investigate and make recommendations on the advisability of reducing the local dues was read as follows: "That the by-laws be amended so that local dues be \$2.00 per annum instead of \$5.00." This report was freely discussed by Drs. J. T. Stamey, Charles G. Geiger, W. T. Stacy, Leroi Beck, W. C. Proud, Hasbrouck DeLamater, J. M. Bell and W. T. Elam. The proposed change to the by-laws will be placed in the hands of every member before the next business meeting at which time it will be voted on.

A motion was made by Dr. Charles G. Gieger and duly seconded that the secretary write the secretary of the State Medical Association for a statement of the amount received by him each year with a list of the expenses. This will be read at our next business meeting.

Meeting of October 4

The regular scientific session of the Buchanan County Medical Society was called to order by the president, Dr. W. H. Minton, in the Missouri Methodist Hospital at 8 p. m. October 4.

The scientific address of the evening was presented by Dr. Winton T. Stacy, St. Joseph, on "Stillbirth Problems in St. Joseph." The paper was well presented and showed that the author had given the subject a great deal of study. Lantern slides made his points more impressive. The universal comment of all members present was that it was a splendid address. It was discussed by Drs. J. T. Stamey, William D. Webb, Clarence A. Good, Reinhold Willman and Walter R. Moore and closed by Dr. Stacy.

EMMETT F. COOK, M.D., Secretary.

CAPE GIRARDEAU COUNTY MEDICAL SOCIETY

The Cape Girardeau County Medical Society met in the court house at Jackson on October 9, with Dr. M. H. Shelby, Cape Girardeau, president, in the chair. Other members present were Drs. D. G. Seibert, D. I. L. Seabaugh, G. W. Vinyard and B. W. Hays, Jackson; and Dr. J. H. Cochran and C. A. W. Zimmermann, Cape Girardeau.

The Society was visited by three members of the Woman's Auxiliary, Mrs. Paul Williams, Mrs. D. I. L. Seabaugh and Mrs. W. H. Wescoat. In honor of these ladies the order of business was altered and the message of the ladies given first place on the program.

The proposition offered by these representatives was as follows: Since the medical profession should lead in instructing the laymen in health problems; since many untrained laymen are now giving health lectures, would members of the Society prepare lectures upon assigned subjects, have their lectures submitted to a committee of Society members for approval, then release them to the public?

There was a discussion of the subject by members and opinions were not uniform. It was decided therefore to allow the question to lie over for a month.

Dr. H. L. Cunningham, Cape Girardeau, called attention to an error in the secretary's report under July 10 of his case of keratitis profunda. This was a unilateral and not a bilateral disease.

CARL A. W. ZIMMERMANN, M.D., Secretary.

JASPER COUNTY MEDICAL SOCIETY

The Jasper County Medical Society met at 8 p. m. in the Legion Club rooms of the Memorial Hall in Joplin October 10. Fourteen members and one visitor were present.

It was decided that the next meeting, at which the program will be furnished by physicians from Fort Smith, Arkansas, should be a dinner meeting. The following committee on arrangements for this meeting was appointed: Drs. John W. Hardy, Jr., R. M. James and J. Albert Chenoweth, of Joplin.

An interesting case of pulmonary tuberculosis was presented in which at first there were no symptoms but temperature. A few weeks later a cough developed and the sputum was laden with tubercle bacilli for the first time. The case was discussed by Dr. William M. Kinney, Carthage, and Dr. Jesse E. Douglass, Webb City.

Dr. John W. Barson, Joplin, showed a specimen of Meckel's diverticulum and fecal concretion found in two cases of intestinal obstruction. He also showed a tooth found in a dermoid cyst of the ovary. Dr. Clark discussed these cases.

Dr. Frances E. Rosenthal, Joplin, reported a case of brain tumor located in the medulla. This had fallen into the foramen magnum obstructing the flow of spinal fluid.

Dr. Ed. D. James, Joplin, reported his own case of sciatica and explained the effective treatment that was given him in St. Louis.

Dr. Everett Powers, Carthage, reported a case of agranulocytic angina.

Dr. Omer L. Alberty, Carl Junction, reported an obstetric case of twins that had died in utero, the delivery being complicated by hour glass contraction of the uterus.

Dr. Paul W. Walker, Joplin, reported a case of papillary carcinoma of the left kidney that had progressed to a large size without symptoms.

PAUL W. WALKER, M.D., Secretary.

NODAWAY COUNTY MEDICAL SOCIETY

The regular monthly meeting of the Nodaway County Medical Society was called to order by the president, Dr. Robert C. Person, Maryville, at 7:45 p. m. at the St. Francis Hospital, Maryville, September 8.

Members present were Drs. Hiram Day, Leslie E. Dean, Loren Egley, Robert C. Person, Jack Rowlett, and W. M. Wallis, Jr., of Maryville, and Dr. Charles D. Humbert, Barnard. Guests were Drs. W. R. Jackson and C. P. Fryer, Maryville; Dr. Herbert J. Rinkel, Kansas City; Dr. L. M. Friedman, St. Louis, medical attache of the local Civilians' Conservation Corps; Drs. Earl Braniger, Jesse Miller and H. L. Stinson, dentists of Maryville, and three Sisters from the hospital staff.

The secretary read a letter in which Dr. C. P. Fryer, now of Maryville, presented a transfer from the Brown County (Kansas) Medical Society to the Nodaway County Medical Society. With Dr. Fryer's consent action on this transfer was postponed to the December meeting.

The scientific program was furnished by Dr. Rinkel, Kansas City, who came as essayist through the courtesy of the Postgraduate Committee of the Missouri State Medical Association. Dr. Rinkel presented an excellent "General Discussion of Allergy"

which was illustrated with lantern slides and black-board diagrams and which brought out many of the late advances in this specialty.

The lecture was discussed by Drs. Dean, Rowlett and Humbert.

CHARLES D. HUMBERT, M.D., Secretary.

PERRY COUNTY MEDICAL SOCIETY

The first meeting of the Perry County Medical Society for the purpose of reorganization and renewing activities was held in Dr. G. A. Blaylock's office in Perryville at 8 p. m., October 11. Dr. Blaylock acted as temporary chairman.

Dr. O. A. Carron was elected a member on transfer from the Ste. Genevieve County Medical Society.

The following officers were elected: Dr. O. A. Carron, Perryville, president; Dr. W. H. Abernathy, Menfro, vice president, and Dr. J. J. Bredall, Perryville, secretary-treasurer.

There was a general discussion of the future activities of the Society with the purpose of creating a closer union of the medical profession.

It was agreed to meet on the second Wednesday of every month at 8 p. m. The next meeting will be held on November 8 at Dr. G. A. Blaylock's office, Perryville.

The following were present: Drs. G. A. Blaylock, J. H. Graff, J. J. Bredall, O. A. Carron, and W. H. Bailey, Perryville, and W. H. Abernathy, Menfro.

JEROME J. BREDALL, M.D., Secretary.

WRIGHT-DOUGLAS COUNTY MEDICAL SOCIETY

The Wright-Douglas County Medical Society met in the Young Hotel in Mansfield at 2 p. m. September 14 with the following members and visitors present: Drs. R. W. Denney, A. C. Ames, R. A. Ryan and C. F. Green, of Mountain Grove; E. G. Beers, Seymour; L. T. VanNoy, Norwood; J. C. B. Davis, Willow Springs; J. A. Fuson, Mansfield, and Mr. E. H. Bartelsmeyer, St. Louis.

As neither the president nor the vice president was present the meeting was called to order by the secretary and Dr. R. A. Ryan, Mountain Grove, was elected to act as president pro tem.

The secretary read a letter from Luther Davis, Noble, reporting the death of his father, Dr. J. R. Davis on September 7 at the age of 77. Dr. Davis had been a member of this Society since 1914 and an honor member since 1927 when his health failed and he retired from active practice. Dr. Davis was a faithful member of the Society.

The subject of encephalitis, at present epidemic in St. Louis, was discussed by several members. An effort was made to ascertain how to recognize the disease should it occur in this territory even though little be known as to its cause or treatment more than general principles.

The subject of the NRA as it affects the physician was discussed and several points were made more clear.

Dr. Davis talked on medical ethics, especially as related to the treatment of one physician by another, and emphasized the application of the principle of the Golden Rule.

A vote of thanks was extended our visitors, Dr. Davis and Mr. Bartelsmeyer, and the management of the Young Hotel for their contribution to the success of the meeting.

A. C. AMES, M.D., Secretary.

WOMAN'S AUXILIARY

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

12th Annual Meeting, Cleveland, June 11-15, 1934

President, Mrs. James Blake, Hopkins, Minnesota.
President-Elect, Mrs. Robert W. Tomlinson, Wilmington, Delaware.

WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION

10th Annual Meeting, St. Joseph, May 8, 9, 1934

President, Mrs. Hudson Talbott, St. Louis.
President-Elect, Mrs. William H. Goodson, Liberty.
Advisory Council, Dr. J. F. Harrison, Mexico.

NEWS NOTES

The outstanding auxiliary event of this fall was the state board meeting called by the president, Mrs. Hudson Talbott, St. Louis, at the Pennant Hotel on Highway No. 40, Columbia, September 20. Luncheon preceded the business session. No larger attendance at a midyear board meeting has ever been registered by the auxiliary in this state. Thirty-eight officers, chairmen and county presidents from St. Louis, Cape Girardeau, Springfield, St. Joseph and intermediate counties responded to roll call. Mrs. A. B. McGlothlan, St. Joseph, national program chairman, and Mrs. David S. Long, Harrisonville, national public relations chairman, were present. A letter was read from Mrs. Willard Bartlett, national historian.

Mrs. Talbott stated the objects of this meeting to be: (1) That new officers and chairmen may better understand the work; (2) that plans for the year may be discussed, and (3) that inspiration may be received for the year's work.

Reports were given by the officers and by fifteen county presidents or their representatives. These were followed by reports of the chairmen of standing committees.

High points of the report of the program chairman, Mrs. David S. Long, were incorporated in the auxiliary notes in the October State JOURNAL.

Mrs. John Zahorsky reported progress toward attaining our *Hygeia* quota. The value of *Hygeia* to schools as a source of health education and of information in support of scientific medicine was illustrated and emphasized by Mrs. Long.

Mrs. C. T. Ryland's report concerning revisions suggested that little should be done until the revision of the national constitution, now in progress, is completed.

Mrs. Wm. H. Goodson reporting on the essay contest desired that the title be simplified. As a result the wording adopted is "What the National, State and Local Governments Are Doing for Health."

Mrs. R. C. Haynes, finance chairman, reminded us that her real labor comes at the annual meeting when the budget must be made and presented.

Mrs. M. P. Neal, chairman of archives, has a number of articles and reports that would be of value in the archives of certain county auxiliaries. These she hopes to place with the proper counties.

The report of the public relations chairman, Mrs. Floyd H. Spencer, brought to mind that this department is our real reason for being an auxiliary. Mrs. Spencer asks that the national recommendations be

heeded in that we make sure of our influence for health education and for appreciation of scientific medicine in those community lay organizations fostering health projects and programs. We are to remember public relations day and to cooperate in every way possible with our county medical societies.

An important opportunity for public relations work appears in Missouri this year. The State Medical Association has appointed a Cancer Committee composed of Drs. Ellis Fischel, St. Louis, D. A. Robnett, Columbia, and Floyd H. Spencer, St. Joseph. A cancer clinic for the indigent poor has been established by the committee at the Fulton State Hospital where special equipment, including \$15,000 worth of radium is at the committee's disposal. The committee has arranged for a cancer campaign in every Councilor District of Missouri put on by selected teams of physicians. The State Cancer Committee considers that "The auxiliary could do no better work than to lend their help to this cause; and wherever a team is to speak the auxiliary should be active in enlisting the cooperation of clubs and churches to secure a large attendance at these lectures."

Mrs. Overholser, chairman of press and publicity, urged that the auxiliary department in the State JOURNAL be read; that regular and full reports from all auxiliaries be sent to her, and that attention be given in each organization to collecting material for the state scrapbook so that each auxiliary might have a worthy scrapbook section. Mrs. Talbott reported Dr. Goodwin's kindly willingness to publish at cost an Auxiliary Bulletin, in addition to our page in THE JOURNAL, to go directly to each and every member. This cost at present seems prohibitive but a committee consisting of Mrs. M. P. Overholser, Mrs. M. P. Neal and Mrs. G. B. Schulz are hoping to present a plan whereby a bulletin of news of the activities and accomplishments of all auxiliaries and interesting personal items may go quarterly to each auxiliary for "broadcasting" at regular meetings.

Mrs. A. B. McGlothlan, national program chairman, spoke briefly on the value of the Handbook to every auxiliary and to auxiliary members.

In the name of the Saline County Auxiliary, its president, Mrs. L. S. James, asked that the next board meeting be held at Marshall.

The Board as a whole heartily concurred with Mrs. Talbott in thanks to Mrs. Ravenel for making such agreeable arrangements for this meeting at the Pennant Hotel.

The coming every October of the Southwest Clinical Society to Kansas City brings at the same time the wives of many of the visiting physicians. Their days are made full of interest and pleasure by the events planned for their entertainment by the Auxiliary to the Jackson County Medical Society. This year Mrs. Ira Lockwood was chairman of the very successful social calendar committee.

The parties began Tuesday afternoon, October 3, with a tea, a gallery walk and musicale at the Kansas City Art Institute. Wednesday brought a luncheon at the Woman's City Club and Thursday a morning tour through the city, closing the day with an evening party at Loew's Midland Theatre.

Mrs. P. T. Bohan, Mrs. T. G. Orr and Mrs. James Stowers, were chairmen respectively for the Tuesday, Wednesday and Thursday entertainments. These proved to be thoroughly delightful experiences for those who were fortunate enough to participate in the diversions.

BOOK REVIEWS

MEDICOLEGAL CASES. ABSTRACTS OF COURT DECISIONS OF MEDICOLEGAL INTEREST 1926-1930. Edited by Wm. C. Woodward, M.D., LL.M., Director, Bureau of Legal Medicine and Legislation, American Medical Association. Chicago, American Medical Association. 1932.

This is an interesting collection of court decisions on medicolegal cases from 1926 to 1930. It is interesting to note the allegations on which the various malpractice suits were based and the opinions of the courts as to what constitutes reasonable care and neglect. It appears oftentimes that points which the doctor would consider of ordinary or minor importance, will be given great emphasis and made a deciding factor in the final adjudication of the claim.

It would be well worth while for every physician to read this book to get the laymen's attitude and judgment on medical men and medical subjects.

E. C. F.

SURGICAL ANATOMY. By Latimer Callander, A.B., M.D., F.A.C.S., Assistant Clinical Professor of Surgery and Topographic Anatomy, University of California Medical School; Associate Visiting Surgeon to the San Francisco Hospital. With a Foreword by Dean Lewis, M.D., Sc.D., LL.D., F.A.C.S. 1115 pages with 1280 illustrations, some in colors. Philadelphia and London: W. B. Saunders Company. 1933. Price \$12.50.

This book is not only an excellent textbook for the student of applied anatomy but also is a very valuable reference book for the surgeon. The entire subject of surgical anatomy is interestingly covered and well illustrated. The anatomy of the various regions and organs is thoroughly discussed and is immediately followed by a consideration of the surgical aspects. The manner in which the author has correlated anatomy, pathology and surgery makes this an outstanding book.

E. V. M.

THE FAILING HEART OF MIDDLE LIFE. The Myocardosis Syndrome, Coronary Thrombosis, and Angina Pectoris. With a section upon the Medico-Legal Aspects of Sudden Death From Heart Disease. By Albert S. Hyman, A.B., M.D., F.A.C.P., Cardiologist, Beth David and Manhattan General Hospitals, etc., and Aaron E. Parsonnet, M.D., C.M., F.A.C.P., Attending Physician and Cardiologist, Newark Beth Israel Hospital, etc. With a preface by David Riesman, M.D., Sc.D., F.A.C.P., Professor of Clinical Medicine, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania. With 166 illustrations, some in colors. Philadelphia: F. A. Davis Company. 1932. Price \$5.00.

This is a most interesting and concise yet complete clinical presentation of the subject. The reader is first impressed with the importance of the proper interpretation of preclinical symptoms as obtained from the patient's description of what to him are unimportant variations of normal health, and their proper treatment in order to prevent an unnecessarily early development of disabling cardiac syndromes.

Coronary disease and angina pectoris are discussed from all clinical angles with just enough theory and historical matter to impress the reader with the wis-

dom of the authors' conclusions. The relation of these two clinical entities to each other and other forms of heart disease of middle life are given in detail.

Of necessity older clinicians learned the great value of first-hand clinical observations before the newer and more expensive diagnostic aids received general acceptance. This book will help recent graduates to grasp the importance of these clinical observations and make them realize that rational therapy may be given without the advantages of expensive diagnostic procedures; and, in fact, such therapy is often required before pathological changes are revealed by the newer methods if the patient is to receive the best that modern medicine has to offer. E. L. P.

FUNCTIONAL DISORDERS OF THE LARGE INTESTINE AND THEIR TREATMENT. By Jacob Buckstein, M.D., Instructor in Gastrointestinal Roentgenology, Cornell University Medical College, etc. (Harper's Medical Monographs.) With 60 drawings in the text and 40 reproductions of radiographs. New York and London: Harper & Brothers. 1932. Price \$3.00.

The author has presented a compilation of an extensive amount of data concerning one of the most important and complex disorders of the human body; namely, the functional disorders of the colon.

This book discusses very clearly and in sufficient detail the normal colon; also the causes, symptoms and treatment of constipation, diarrhea, mucous colitis, gaseous distension of the colon and malformations of the colon.

In the chapter on treatment, the author has given some very valuable diet tables and has outlined a comprehensive régime for the patient suffering from functional disorders of the colon. The general theme is, that functional disorders are the cause of symptoms of abdominal distress in a large majority of patients seen by the physician.

The book is a welcome contribution on this subject and should be beneficial to the internist, surgeon, urologist and general practitioner. F. J. W.

VOCATIONAL GUIDANCE IN ENGINEERING LINES. Elicited and edited by the American Association of Engineers. Editorial Committee: J. A. L. Waddell, Frank W. Skinner, and Harold Wessman. Pp. 521, with numerous charts and illustrations made from original photographs. Easton, Pennsylvania: The Mack Publishing Company. 1933. Price \$2.50.

This valuable and comprehensive volume published under the auspices of the American Association of Engineers is intended to provide a treatise that will describe in full detail the engineering profession for students who are striving to enter the guild. At the same time it puts before them numerous examples of unusually fine engineering English as models for their future technoliterary work.

Incidentally the book will supply the faculties of American engineering schools with a fund of information about the profession they are teaching, only a portion of which is now known to any of them individually but which information they should be able to use to great advantage in their pedagogic work.

In engineering colleges as in medical schools a very considerable percentage of aspirants are found to be wholly unfitted for the profession which they have elected to follow. Careful study of this book

will serve to keep a lot of these square pegs out of round holes and thus prevent a great number of young men from making failures of their lives and from developing an inferiority complex because of having flunked out of a technical school.

While a young man may be wholly unsuited for the engineering profession it sometimes is difficult to convince him, and particularly his parents, of the fact. Careful study of this unpretentious but comprehensive and sterling volume will work wonders in cases of this sort.

The book should be read and reread by every prospective student of engineering.

The scientific world is under heavy obligation to Dr. Waddell and his associates for their altruistic and workmanlike efforts in the production of this admirable volume.

R. L. S.

MANUAL OF SURGERY. By Alexis Thomson, Alexander Miles, M.D., LL.D., F.R.C.S. Ed., Consulting Surgeon, Royal Infirmary, Edinburgh, and D.P.D. Wilkie, M.D., F.R.C.S. Ed. and Eng., Professor of Surgery, University of Edinburgh. Volume first, General Surgery. Eighth edition with 176 illustrations. New York: Oxford University Press, American Branch. Price \$3.50.

The time honored Thomson and Miles "Manual of Surgery" is revised in the eighth edition by Alexander Miles, Consulting Surgeon to the Royal Infirmary of Edinburgh, and D.P.D. Wilkie, Professor of Surgery at the University of Edinburgh with the assistance of twenty-one coadjutors, all of the University of Edinburgh.

The volume is of convenient size to carry, with twenty-one chapters, well presented and in rather fine print, representing modern surgery as taught at the University of Edinburgh.

In the introduction to the first chapter the authors recognize the impossibility of drawing a hard and fast line between medicine and surgery; but for convenience they define surgery as "the art of treating lesions and malformations of the human body by manual operations, mediate and immediate." This definition is followed through the volume.

The first two chapters are on "Repair," followed by two on "Inflammation and Suppuration"; three deal with "Ulceration, Gangrene and Wound Infections." Tuberculosis, syphilis and tumors are discussed in separate chapters. Three chapters are devoted to injuries, followed by chapters on surgery of the blood vessels, the lymph vessels and gland, the nerves, skin and subcutaneous tissue, the muscles, tendons and tendon sheaths, the bursae, diseases of bone, and diseases of joints.

Most of the 176 illustrations are photographs, which are well chosen. Specific references to the literature are omitted, as the manual deals with recognition and treatment of surgical disorders and is not intended as a reference work.

The reviewer will be greatly interested in the volumes to follow in this eighth revision.

P. N. J.

QUARTERLY BULLETIN OF THE HEALTH ORGANIZATION OF THE LEAGUE OF NATIONS. World Peace Foundation, Boston.

This bulletin, compiled by Dr. E. Burnet, Deputy Director of the Pasteur Institute at Tunis, is devoted to an extensive discussion of the general principles governing the prevention of tuberculosis. Over 160 pages are covered under the following headings: (1)

Tuberculosis, a social disease; (2) agencies for the prevention of tuberculosis; (3) political and administrative framework; (4) cost, and (5) conclusion.

After reviewing the tuberculosis situation in Germany, Great Britain, Scandinavia and the United States, Dr. Burnet reaches the conclusion that tuberculosis is a social disease. He further contends that the decline in the tuberculosis mortality is not due to a single cause but to many causes such as "improved well being, general progress of civilization, cleanliness, nutrition, education, raising of the worker's standard of living, increased security as regards means of livelihood and the moral poise resulting therefrom."

Social insurance for the protection of work, the worker's health and security is considered one of the most powerful adjuncts in the campaign against tuberculosis. This fact should be of special interest to Americans since this method of attack is entirely overlooked in this country.

Practically every phase of preventive work is discussed at length and valuable statistical data are presented, especially in regard to the cost of tuberculosis to a community.

The bulletin will prove helpful to the public health officer and especially to the student of tuberculosis.

H. I. S.

ROENTGENOGRAPHIC STUDIES OF THE URINARY SYSTEM. By William E. Lower, M.D., F.A.C.S., chief of department of urology, Cleveland Clinic, Former Associate Professor of Genitourinary Surgery, Western Reserve University, surgeon to Cleveland Clinic Hospital; and Bernard H. Nichols, M.D., F.A.C.R., chief of department of roentgenology, Cleveland Clinic, Cleveland, Ohio. With 812 illustrations. St. Louis: The C. V. Mosby Company. 1933. Price \$16.00.

Out of the tremendous experience in the cooperative diagnostic efforts of an eminent urologist and a leading roentgenologist, this book comes to bring an extraordinary wealth of proved case histories with roentgenograms. The reading pages while meagre provide ample discussion of the well established measures of genito-urinary radiography and pyelography; but the newer diagnostic procedures of intravenous pyelography and urethral studies are afforded greater space.

One must see this book to appreciate the extent of the illustrated case histories. There are 812 reproductions. They are excellent and hardly require the line sketches attached to each case. Especially commendable are the chapters and extensive illustrations upon renal tuberculosis and diverticulosis of the bladder. The clinical values of the book are enhanced by the chapters from the differential diagnosis of gall-bladder disease, chronic appendicitis, diseases of the spine, etc.

One must not confuse this book with the usual roentgen atlas of beautiful plates for it really represents the clinical coordination of urology and radiology. The operative procedures are described and the rescued specimens are reproduced together with the opaque injection of the arterial vessels of many specimens.

The authors are to be commended for the magnificent simplicity and studied brevity of words which seem to characterize this large volume of illustrated case histories. There is not a padded paragraph in the book. Furthermore, the price of the book is most reasonable, when one considers the 812 illustrations of roentgenograms.

E. H. S.

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E. J. GOODWIN, M.D., Editor
1023 Missouri Building, St. Louis, Mo.
Telephone, Jefferson 5261.

PUBLICATION } J. C. B. DAVIS, M.D., Chairman
COMMITTEE } G. WILSE ROBINSON, M.D.
M. A. BLISS, M.D.

THE DIAGNOSIS OF ACUTE INTESTINAL OBSTRUCTION

THOMAS G. ORR, M.D.

KANSAS CITY, KANSAS

In these days of chemical studies, studies of perverted physiology and discussions of lethal factors involved in acute intestinal obstruction early diagnosis, the most important phase of the subject has been in some degree pushed into the background. Since a decrease in the very high mortality rate of acute obstructions of the small intestine depends chiefly upon early diagnosis and operation, this aspect of the subject must always be emphasized so that dilatory methods and adjunct treatments may not dominate the therapy of this important disease.

When discussing a disease having an average mortality of about 50 per cent frequent repetition and reiteration of the essential diagnostic points cannot be considered untimely or out of place in any general medical assembly. It is especially emphasized that the general practitioner of medicine familiarize himself with not only the signs and symptoms of acute intestinal obstruction, but with all acute conditions of the abdomen that may require surgery.

History Given by Patient.—In all cases in which there is a suspicion of acute intestinal obstruction a careful history should be obtained. The story is usually one of acute onset with recurrent or intermittent colicky pain accompanied by nausea and vomiting. If there has been no infection or involvement of the bowel circulation fever will be absent. Often a history of previous mild attacks may be obtained. A previous abdominal operation, especially if accompanied by drainage, is significant. Too often there is included in the patient's story an account of repeated doses of cathartic without result except to aggravate vomiting. He may have noticed a swelling appear and disappear in the abdomen during the attacks of acute colic. Some gas may have been passed or a small bowel

movement obtained by enema. He may say that several hypodermics have been given with only partial or temporary relief.

Physical Signs and Symptoms.—It must be remembered that there are two definite and distinct types of intestinal obstruction, simple occlusion and occlusion associated with disturbance of blood supply or strangulation. The importance of recognizing these two types becomes evident when it is remembered that the latter is more rapidly deadly than the former and even short delay more serious.

Vomiting is usually frequent with obstructions high in the small bowel. This symptom is quite variable in different individuals. The frequency of vomiting is increased by taking liquid by mouth. Visible peristalsis may be evident. In some cases there appears and disappears with the intermittent colicky pains a tumor-like swelling in a certain portion of the abdomen. When evident this is quite diagnostic as well as a factor in localizing the obstruction. The character of the vomitus is usually bile stained or brown from upper intestinal content. In late cases the vomitus may have an odor suggesting feces.

General abdominal distention is characteristic of the disease and generally develops rapidly. If the obstruction is high the distention may be slight and confined to the upper abdomen.

Simple obstruction does not cause localized tenderness and fever. Obstruction with strangulation causes both local abdominal tenderness and fever. Greater prostration is noted when the bowel circulation is involved. These observations may be of great importance in distinguishing the two types. In either type any leakage of intestinal content at once causes peritoneal irritation and changes the entire picture.

The pulse in the early stages of the disease may be normal. As the signs and symptoms become more marked the pulse rate increases. This change is coincident with rapidly developing dehydration and hypochloremia incident to vomiting. The general appearance of the pa-

tient indicates the gravity of his condition. In the far advanced cases the Hippocratic facies, subnormal temperature, moist skin and cyanosis fortell the lethal outcome.

Too much faith must not be put in enemas as a diagnostic aid. Many times enemas will produce gas and feces from below the site of obstruction. Such results may be misinterpreted and temporarily lead the physician away from the correct diagnosis. It is to be remembered that the bowel below the obstruction retains its normal function and is capable of expelling both gas and feces.

Cathartics should never be given in any acute, undiagnosed intra-abdominal disease. No therapeutic or diagnostic benefit can result from such a measure. It is both true and unfortunate that doctors and patients have too frequently had the idea that an acute colicky pain calls for immediate catharsis.

The injudicious use of morphine may so mask symptoms of acute intestinal obstruction that a correct diagnosis is delayed until irreparable damage is done. It is recommended that the diagnosis be made first and the morphine used later. The giving of a generous quantity of sodium chloride solution by vein or under the skin may in certain cases so improve the patient's general condition that a suspicion of mistaken diagnosis may be entertained by the surgeon. It is, therefore, imperative that the action of both morphine and salt solution be familiar to the physician or surgeon directing the patient's therapy.

Laboratory Findings.—As an aid to early diagnosis of intestinal obstruction the laboratory is disappointing. A moderate leukocytosis may be expected in some cases but is likely to be late in the disease. The rise in the non-protein and urea nitrogen, the rise in the carbon dioxide combining power and fall in the blood chlorides, so characteristic of late high obstruction, can be of little or no value in early diagnosis since such changes do not take place until there has been marked depletion by excessive vomiting. Blood chemical studies are of diagnostic importance in advanced cases and are a definite aid in specific chloride therapy. The urine is diminished but does not contain anything of diagnostic importance.

Roentgen Ray as a Diagnostic Aid.—In recent years repeated attention has been called to the roentgenogram as an aid in the diagnosis of intestinal occlusion. The method has received general recognition and many favorable reports have been published. The visualization of fluid levels is an important sign in the roentgen ray diagnosis of obstructive lesions of the small bowel. Fluid levels are best demonstrated in

the upright position but if the patient is very ill may be satisfactorily shown with a lateral abdominal exposure. Ladder-like patterns are often seen in the roentgenogram but are by no means always present or necessary to make a diagnosis of bowel stasis. Recently Ginzburg¹ reviewed fifty-nine cases of acute mechanical occlusion of the small intestine studied with the roentgen ray and confirmed by operation. He notes that the cardinal signs of small bowel obstruction are: (a) visualization of dilated loops of small bowel; (b) presence of fluid levels in the small bowel and (c) failure to visualize gas in the colon. It is his opinion that patients with ileus in whom gas can be demonstrated in the colon are probably not suffering from mechanical occlusion of the small bowel.

From a practical viewpoint the use of the roentgen ray in the diagnosis of acute obstruction of the small bowel should be considered of great assistance when the findings are properly interpreted. Such conditions as paralytic ileus, reflex ileus and peritonitis show gas and fluid levels and, therefore, simulate true mechanical obstruction. The clinical findings must always be correlated with the roentgen ray findings to avoid useless and dangerous operative procedures.

It is rather generally believed that barium or other contrast media should not be used when complete obstruction of the small intestine is suspected. Ginzburg reports three cases in which an acute obstruction was precipitated by the use of an opaque meal. It is doubtful if the addition of contrast media aids in the diagnosis of obstruction in the hands of one competent to read roentgen ray films. In selected cases barium enema may be of value in excluding or confirming suspected obstructions of the colon.

Differential Diagnosis.—To arrive at a positive diagnosis of acute intestinal obstruction is often quite difficult. To determine with finality the difference between simple occlusion of the bowel and occlusion with strangulation is also at times quite impossible. In the former it must be remembered that the typical signs and symptoms are acute, intermittent colicky pains without localized tenderness, fever and early leukocytosis. In the latter there is not only acute colicky pain but also tenderness, usually some rise in temperature, pulse and leukocytes. With strangulation of a large segment of gut there may be evidence of shock. The pain is often more severe than in simple obstruction and the general evidence of an acute severe illness more manifest. With the spasm of colicky pain a more or less localized tumor may rise in the

1. Ginzburg, L.: X-Ray Diagnosis of Acute Intestinal Obstruction Without the Use of Contrast Media, *Ann. Surg.* 96:368 (September) 1932.

abdomen, to disappear promptly when the pain recedes. With strangulation of a large segment of gut there may persist visible evidence of a localized distention of the involved gut. As a means of emphasizing the importance of early diagnosis and surgical treatment of acute strangulation within the abdomen, one only need compare the high mortality rate of such conditions with the much lower rate of strangulated hernia. In the latter the evidence of strangulation is visible; in the former it is concealed.

Intussusception rightly belongs to one of the two types noted above. With intussusception there may be either simple obstruction or obstruction associated with gangrene. The importance of early diagnosis cannot be too strongly emphasized. The early age of the patient, the excruciating pain, the vomiting, the presence of a sausage shaped mass, the bloody mucus in the stool and the palpation of the intussusception by rectum, are differential diagnostic points in this type of obstruction.

Other conditions producing abdominal distention which must be distinguished from mechanical occlusion and strangulation are so-called paralytic ileus, peritonitis, reflex or toxic distention and simple "gas pains." Unfortunately acute localized peritonitis does at times produce mechanical occlusion of the small bowel but equally as fortunate the obstruction is often relieved when the infection subsides and the bowel function is restored. This knowledge alone should be a deterrent factor against any decision to explore the abdomen in search of an obstruction in the presence of acute infection. It is this type of obstruction, usually postoperative, that gives the surgeon most concern. To reach a determined decision to interfere surgically with its high mortality or continue conservative measures with its tormenting doubt taxes his courage to the utmost. The diagnosis of other types of abdominal distention is usually not associated with much difficulty. Factors concerned in the causation of the distention are usually quite evident and lead to proper conservative therapy.

SUMMARY

To the alert physician, any acute abdominal pain suggests the possible necessity of emergency surgery. It is true that operation should not be done for pain alone, but it is equally true that the character of the pain may be a definite guide in favor of operation. Intermittent colicky or cramp-like pain within the abdomen usually means some involvement of the bowel interfering with normal peristalsis. A signal such as this does not call for castor oil or other cathartics, but rather a temporary suspension

of all intake by mouth until a satisfactory therapy can be decided upon. The family physician must act promptly and firmly with this knowledge and impress his patient with its importance.

Abdominal distention is always a danger guidepost in abdominal surgery. Distention following any abdominal operation presents the problem of differentiation between obstructive and nonobstructive lesions. Patients with abdominal distention due to intestinal stasis are never entirely out of danger until the distention is relieved.

It cannot be too strongly impressed upon the physician who first attends a patient with symptoms of acute intestinal obstruction that no type of therapy can be a substitute for early diagnosis and operation. A glance at the rapidly mounting percentage of mortality rate as even the hours go by, is grim evidence of the truth of this statement. Procrastination is no part of the treatment of acute obstruction of the small bowel.

University of Kansas School of Medicine.

DISCUSSION

DR. WILLARD BARTLETT, JR., St. Louis: We have always been advocates of enterostomy as opposed to exploration and corrective operations on patients with acute intestinal obstruction because the mortality of exploration after the first few hours runs from 25 to 60 per cent in all large series of cases, whereas the incidence of gangrenous gut (barring external hernias) is consistently less than 5 per cent and we are therefore "playing the percentage" and avoiding major operations on desperately sick patients. Dr. Orr's contributions to the treatment of the chemical derangement and dehydration accompanying advanced obstruction are embodied in the standard replacement therapy of water, sodium chloride and glucose that is everywhere practiced as adjuvant treatment for these complications of ileus.

I want to mention some findings from an unpublished paper of ours which have led us gradually to doing fewer and fewer enterostomies. With continuous, positive suction applied to the stomach or duodenum as one prefers through a nasal catheter one can keep the obstructed intestine continuously empty and at the same time state with mathematical accuracy the number of cubic centimeters per hour of intestinal secretion that returns to the stomach. I have observed, and the slides show, that the rate of flow diminishes rapidly after the application of continuous suction as the tonus of the distended bowel returns. As the ileus subsides, whether due originally to infection adjacent to the bowel or to edema and spasm associated with mechanical obstruction, one sees that the current then begins to flow in the normal direction from the stomach through the pylorus and into the intestine and at this point audible peristalsis ordinarily returns. With the suction still working, the patient is permitted to drink and as soon as an amount sufficient for his needs is being put through the pylorus over a 24 hour period, the tube may be withdrawn and replacement therapy is no longer necessary. If, after the original decompression of the

obstructed gut by this means, ingested fluids persistently refuse to pass through the pylorus, one can proceed with a corrective operation on a patient who is no longer dehydrated and in a precarious state of chemical imbalance, perhaps exhausted by vomiting and pain which disappear after decompression, and whose bowel is no longer distended and therefore impossible to handle with safety.

I have coined the term "pyloric balance," referring to the pylorus as an anatomical landmark rather than in its physiological role, and speak of a "negative balance" when the gut is still emptying back into the stomach, and of a "positive balance" when the normal flow from stomach to intestine is brought about. I should like to point out that Senn in 1889 credited Kussmaul with the practice of treating the obstructed gut by syphonage and that an apparatus, of which mine is a simplified version, for continuous, positive suction from the stomach was first described by Ward of San Francisco in 1925. It has tended to replace enterostomy in our hands since early 1930. Enterostomy is superior in those cases of colonic obstruction in which the ileocecal valve is competent and neither decompression nor enterostomy should be attempted in jejunal obstruction since the necessary replacement therapy is impossible for more than a few hours with obstruction at so high a level.

GASTRIC AND DUODENAL ULCER

PRINCIPLES OF MEDICAL AND SURGICAL MANAGEMENT

J. W. THOMPSON, M.D.

AND

HORACE W. SOPER, M.D.

ST. LOUIS

Peptic ulcers, gastric and duodenal, have formed one of the most prolific sources of discussion in medical literature. Since Wölfler¹ described gastro-enterostomy in 1891 there has been a vast amount of grist go through the mill of controversy relative to this disease. Most of the recent literature on the subject has dealt with possible etiologic factors. In past years the relative value of medical versus surgical treatment provided discussion which often became more acrimonious than scientific. The object of this limited paper is to stress once more the practical side of the subject rather than to emphasize the divergent opinions concerning the various possible causes of the disease. The material serving as the basis for this paper is the combined clinical experience of the authors in the Soper-Mills Clinic. Definite standards of treatment have been adhered to in both the medical and surgical phases of peptic ulceration of the stomach and duodenum. These will be reviewed.

Peptic ulcer in the stomach or duodenum may possibly have some common factors in etiology, but the duodenal type is by far the more com-

mon. The experimental surgeons have presented evidence tending to prove that peptic ulcer is due to acid gastric secretion acting upon a mucous membrane that lacks some neutralizing factor to adjust the fine physiological balance between the numerous secretions and enzymes involved in digestive juices of the stomach, duodenum, pancreas and liver. Mann and Williamson² have produced experimentally by "surgical duodenal drainage" peptic ulcers in the dog that are indistinguishable histologically from those found in man. Elman and Rowlette³ have interestingly shown that the neutralizing effect of regurgitation of duodenal content of bile and pancreatic juices is a definite entity in maintaining normal values of acidity in the stomach. Strauss,⁴ who recommends partial gastrectomy even for duodenal ulcer, is convinced that the factor of hyperacidity is the most important one in the causation of ulcer and in its recurrence. More conservative surgeons doubt this view and point to recurrences even after partial gastrectomy approaching sub-totality in extent. The element of the sympathetic nervous system has recently been given more attention and clinicians point out the great influence high speed living, constant nervous tension, irregular habits of eating, indiscretions in drinking alcohol and excessive use of tobacco may possibly have on the character of the gastric and duodenal secretions. The factor of diet recently has been undervalued. Walters and Snell⁵ report that in Central European clinics the gastric ulcers are of a different type than those met with in the Middle West of the United States. The European apparently is subject to a more severe multiple ulcerative type of lesion whereas in America the patient with a peptic ulcer more frequently has a single and less extensive lesion. The thought has been advanced that a European, particularly in the Teutonic countries, ingests a much rougher type of food which is productive of trauma to the gastric and duodenal mucosa. Mann⁶ demonstrated experimentally in healing peptic ulcers that even the slightest trauma will dislodge the serofibrinous exudate from the crater of a small ulcer and thus retard healing, or leave the broken surface of mucous membrane easily vulnerable to additional trauma and digestion by the normal secretions. These factors have a bearing on the practical points employed in the rational treatment of peptic ulceration.

Peptic ulcer in the duodenum is not so important as one situated on the stomach itself. In the former, malignancy can for all practical considerations be dismissed as almost too rare to consider. Malignant ulcers of the ampulla of Vater are an entity but malignant degenera-

Read at the 76th Annual Meeting of the Missouri State Medical Association, Kansas City, May 1-4, 1933.

tion of a peptic ulcer of the duodenum almost never occurs. McCarty⁷ long ago advanced the proposition that peptic ulcer in the stomach undergoes in certain instances a malignant metaplasia. He has much experience and vast clinical material to support this opinion but has been disagreed with by other men of good repute. Whether a peptic ulcer does or does not change into a cancer of the stomach, or whether malignant ulcers of the stomach are simply ulcerating carcinomas is a scientific question for pathologists to settle among themselves. The practical side of the question is of extreme clinical importance. Gastric ulcer must be classified clinically as benign or malignant and this differentiation is at times difficult. Alvarez⁸ states that any gastric ulcer larger than a dime in diameter should be considered as potentially malignant and resection considered in treatment. Soper⁹ and others have shown that even larger gastric ulcerations heal under medical regimen of rest, diet and general hygiene. Balfour¹⁰ recommends jejunostomy designed to heal large penetrating ulcers of the stomach. This may be necessary in some few selected cases. Soper has demonstrated that the indwelling Levin duodenal tube serves the same purpose as jejunostomy and by this means has repeatedly demonstrated the value of the method. Such ulcers should heal with reasonable promptness in the course of three to five weeks or be considered malignant.

The close cooperation of clinician, roentgenologist and surgeon cannot be too strongly emphasized in the management of peptic ulceration of the stomach. The roentgenologist in many ways bears the burden of such responsibility. He must decide from his fluoroscopic findings and roentgenograms whether malignancy is present. Suffice it to say that surgery in cancer of the stomach is a sad story; with few cures. The surgeon meets with a low incidence of operability to begin with; encounters mortality incident to operative risk, and then is still faced with the tragedy of frequent recurrence.

Peptic ulcer of the duodenum, fortunately, responds to medical treatment in the vast majority of instances. Many people have been sufferers from duodenal ulcer and the symptoms have been so mild that little or no attention was paid to them. Hargis and Robertson¹¹ demonstrated in autopsy material old scars on the duodenum in many cases coming to autopsy after death from unrelated pathologic conditions. There is frequently so little trouble caused the patient by his ulcer that perforation in some cases and hemorrhage in others are the first symptoms. Contrarily, many people suffer

severely out of all proportion to the amount of pathologic change found at operation. These are the patients with marked hyperacidity, with intense pylorospasm and increased motor activity of the stomach. In some of these, as Nagel¹² has shown, the lesion is more of a duodenitis rather than an ulceration. When not amenable to dietetic management these cases should be operated upon and some type of pyloroplasty or pylorotomy performed. If such operation is thought inadvisable then simple posterior gastro-enterostomy.

Medical treatment of duodenal ulcer has in recent years been greatly simplified and rationalized. In the acute stages a diet consisting chiefly of milk and cream, junket, thin cooked cereals with cream and sugar added, forms the standard measure now employed. The feedings are given in quantities of six to ten ounces every two hours. Diluted egg albumin alone often allays severe symptoms. These frequent feedings serve to maintain lowered acidity and provide a smooth texture to the diet which prevents trauma to the ulcer that might be caused by foods containing fibers of cellulose or having hard sharp surfaces which could dislodge the delicate serofibrinous plug beneath which the delicate proliferating tongues of mucous membrane grow as healing takes place. This has been demonstrated by Mann⁶ and by Caylor¹³ in human duodenal ulcer. Soper has always been a strong advocate of the theory that coarse rough particles of food are etiologic factors in initial production of ulcer in susceptible patients. It is for this reason that no patient with duodenal ulcer should eat raw fruits or vegetables. Unfortunately at the present time such foods form the constituents of many so-called salads. The weird combinations that are possible with a few raw fruits and vegetables together with various combinations of spices, vinegars, acids and other decoctions poured over them and then consumed at afternoon and evening sessions of card games are legion. Fortunately women are less frequently liable to ulceration of the duodenum than men for without a doubt some of these creations are responsible for duodenal ulcer, especially recurrences, in the reluctant spouses. Tomatoes are notorious in the experience of the senior author as a factor in causing a recurrence of symptoms in duodenal ulcer patients. Raw apples are similarly frequent offenders. Consequently these foods should be interdicted in ulcer patients.

The administration of alkalis to ulcer patients has been long a matter of controversy. Suffice it to say that in our clinic we no longer employ them extensively. The smooth diet, frequently fed, seems to be the secret of success-

ful management. After the first week or ten days on strictly liquid or soft foods the patient is permitted coddled eggs, increased amounts of cooked cereals, together with cottage cheese, toast with the crusts removed, creamed vegetable soups, ice cream, jello, baked or mashed potatoes, stewed fruits, white meat of chicken and tender broiled steaks. Fried foods and raw fruits or vegetables are strongly forbidden. The use of all forms of tobacco is restricted.

Other forms of medication frequently employed are mild sedatives together with small doses of atropine or belladonna. A favorite drug is barbital combined in a capsule with one five hundredth grain of atropine sulphate, to be taken before or after meals as desired. These capsules are conveniently carried by the ambulant patient more readily than liquid medicines.

Alkalies are occasionally employed and there are the many forms of powders and tablets available for such purposes due to the extensive advertising and propaganda emanating from drug and chemical manufacturers. We have thought best not to tell the patient to purchase proprietary medicines and when indicated frequently prescribe the following combination for epigastric pain or distress:



Fig. 1. E. B. C., July 8, 1924. Large gastric ulcer on lesser curvature. Medical management by dietetic regimen only. January 27, 1928, roentgen ray showed ulcer had remained healed during interim. General rational diet taken then; symptom free.



Fig. 2. D. T., November 25, 1932. Large penetrating gastric ulcer near cardia. Hospitalization and tube feeding per Levin nasal-duodenum-jejunal catheter.

R Magnesium phosphate

Calcium phosphate ppt. aa. grams 45

Sig.: Level teaspoonful in $\frac{1}{4}$ glass water after each feeding.

If the milk diet is somewhat constipating we frequently employ the following prescription to aid colonic function:

R Magnesium, light calcined

Magnesium, heavy calcined aa. grams 30

Sig.: Level teaspoonful in glass of water upon arising.

The above prescriptions together with mild sedatives, diet and general hygienic measures form the principal methods of medical management of peptic ulcer of the duodenum and stomach as employed by us. In more severe forms of gastric ulcer, benign, the intranasal Levin tube passed into the jejunum must be employed. This is best done in a hospital as such patients frequently become irritable because of the presence of the tube. In tube feeding a high caloric mixture containing milk and cream with powdered sugar and eggs is injected through the tube into the jejunum. This principle is the same as employed by Balfour in surgical jejuno-stomy without the attendant surgical risk.

The above outlined principles have been employed with consistent success in the medical management of peptic ulcer in the Soper-Mills Clinic. Practically all such patients can remain ambulant and gainfully employed. Bleeding or hemorrhaging ulcer requires more detailed consideration.



Fig. 3. Same as figure 2, December 20, 1932. Healing complete in about three weeks. Stools free from occult blood. No symptoms. Remained well to date on dietetic regimen.

Indications for surgical intervention in duodenal ulcer have become fairly well standardized in the minds of most clinicians. Most duodenal ulcers respond well to medical management. It is the patient who presents himself with perforation, severe recurrent bleeding, marked pylorospasm, persistent pain, increasing frequency of attacks of exacerbations of pain in the back denoting attachment to the pancreas, pyloric obstruction with gastric motor delay, who needs surgical intervention. Contrary to the general opinion of many of the profession, a patient with duodenal ulcer need not suffer until pyloric obstruction occurs before he becomes a surgical and not a medical problem. Many people with duodenal ulcer suffer severely with burning pain, which is not relieved by alkalies or diet, who have rapid gastric emptying time. Their symptoms are due to hyperperistalsis and pylorospasm and many of them will never get relief except by surgery. It is granted that the results in cases with obstruction are the most dramatic in response to operative procedure, but by far the most of those who need surgery for duodenal ulcer have no marked pyloric obstruction.

The pathologic characteristics of surgical duodenal ulcer vary greatly in individuals but the following classification serves as a guide in selecting cases for operation. The pathological

characteristics are definitely related to clinical features of the disease.

CLASSIFICATION

1. Acute perforated
2. Recurrent hemorrhagic
3. Chronic recurrent (with duodenitis, possible multiple ulceration of serpigenous character)
4. Organic obstructive
5. Multiple ulcerative (short duration and severe symptoms)
6. Chronic perforative (with attachment to head of pancreas)

Case illustrations of the above types have been previously reported by Thompson.¹⁴

The selection of an operative procedure best suited to the individual ulcer patient will vary according to the anatomic and pathologic characteristics of the ulcer. The general habitus, size and weight of the patient in relationship to the position of the stomach and its accessibility at the operating table will influence the choice. In patients with the duodenum mobile or readily mobilizable, a pyloroplastic type of procedure will give excellent results, as reported by Judd,¹² Deaver and Burden,¹⁵ among others.

Bleeding ulcers are especially amenable to such procedures as they give one opportunity to excise the source of hemorrhage and treat possible contact ulcers on the posterior wall of the duodenum as advocated by Balfour.¹⁶ Pylorotomy can sometimes be accomplished with ease and with splendid results. The five patients on our series who had such an operation all got complete relief. In a majority of cases, how-



Fig. 4. J. F., June 29, 1931. Levin nasal-duodenum-jejunal catheter in situ in first portion of jejunum and terminal duodenum. Arrow denotes shadow of barium in ulcer crater. Healing progress unsatisfactory. Surgery advised.

ever, one will be unable to perform such procedures safely and satisfactorily due to the great amount of scar tissue, inaccessibility of the first portion of the duodenum, attachment to the head of the pancreas, or for other anatomical and mechanical reasons. In such patients posterior gastro-enterostomy still is the procedure of choice and greatest safety in the hands of the majority of surgeons. The more radical gastric resections for simple duodenal ulcer carry a low mortality rate only in the hands of the most experienced gastric surgeons. Berg¹⁷ and Lewisohn are leading advocates of radical procedures in simple duodenal ulcer. Their clinical material may resemble the types reported by the European school of gastric surgery to which attention has been called by Walters and Snell.⁵ It is well known that members of the Jewish race are more apt to have marginal ulceration following gastro-enterostomy. One such complication occurred in our series and all of our patients have been followed by postoperative roentgen studies as well as examined for occult bleeding in the stools. The patient just referred to healed his jejunal ulcer on medical regimen. Soper⁹ has shown that jejunal ulceration can be healed by means of the indwelling Levin duodenal catheter. Our experience has led us to be conservative in the management of duodenal ulcer surgically as well as medically. Gastro-enterostomy will give good results in approximately 90 per cent of cases to which it is applied as has been repeatedly emphasized by Balfour from the material of the Mayo Clinic. We have found no reason to depart from this conservative policy.

Perforation and bleeding to the extent of severe hemorrhage are the most alarming complications of peptic ulcer. The former always demands immediate surgical treatment; the latter almost never requires emergency intervention. Shelly¹⁸ reviewed eighty-two cases in which there was an immediate operative mortality of 18.3 per cent chiefly due to peritonitis and pulmonary complications. His follow-up records of cases was excellent and his statistics confirm the conservative opinion that simple inversion of a perforated ulcer with drainage of the abdomen will save more patients than any other procedure. Adding posterior gastro-enterostomy to the load a patient with a perforation already carries will in not a few instances be a factor in causing his death. It is only in the very rare combinations of circumstances favorable to the patient, such as a very recent perforation with actual or impending complete pyloric obstruction, that gastro-enterostomy should be done simultaneously with inversion. Should obstruction occur following recovery

from simple inversion subsequent operation can be performed with much less hazard. Many patients will remain free from symptoms following simple inversion. This fact alone condemns the routine performance of gastro-enterostomy in the presence of acute perforation.

Hemorrhage from peptic ulcers is best treated in accord with the physiologic principle of continuous syphonage as recently advocated by Soper.¹⁹ This is best accomplished by employing the Levin tube which is left in the stomach to withdraw blood clots and all gastric secretions for a period of three days or more. Keeping the stomach empty inhibits peristalsis and active bleeding. The tube permits quick detection of recurrence of bleeding. Transfusion should be resorted to early if the patient is depleted. After the initial hemorrhage has ceased the tube can be permitted to enter the duodenum or jejunum and feedings injected through the tube. Other treatment is symptomatic and the tube is dispensed with when the improvement of the general condition indicates. Nasopharyngeal irritation produced by the tube is one disadvantage of the method but this is far outweighed by the obvious benefits. Spraying the nasopharynx with weak cocaine (2 per cent) will allay most of the discomfort. Dropping liquid petrolatum through the nose, permitting the oil



Fig. 5. J. F., April 26, 1933. About two years after gastric resection, posterior Polya type. Ulcer benign. Patient symptom free. Stools negative for occult blood, guaiac test.

to find its way along the tube into the esophagus assists in keeping down the sensation of gagging or dragging upon swallowing which the presence of the tube produces. The removal of the stagnant fermenting and sour blood clots prevents harmful irritation of the mucous membrane by the accompanying hypersecretion. The comfort of the patient is much greater than with repeated aspiration with a larger tube and keeping the stomach constantly empty assists in the occlusion of the eroded blood vessel causing the hemorrhage.

Peptic ulcer located in the stomach itself demands a vastly more discerning policy as here we have always to face the factor of a possibly malignant lesion. Consequently, any gastric ulcer which does not show prompt and definite tendency to heal under medical management is recommended for surgical exploration. The responsibility of the clinician and roentgenologist in such decisions is very great. If anything is ever to be accomplished in surgical treatment of cancer of the stomach, early surgical intervention is of paramount importance. Gastric resection in the hands of experienced surgeons is certainly less risky than temporization with possible carcinoma of the stomach. Even total gastrectomy is becoming more frequently accomplished and a case surviving as long as two years afterward has been recently reviewed by Walters.²⁰

Postoperative management is of equal importance with other considerations. The stomach is kept empty by means of the Levin nasal tube for twenty-four to seventy-two hours. Body fluids are maintained by parenteral means of administration. Routine CO₂ inhalations are used to avoid postoperative pulmonary atelectasis. The diet is increased gradually about in accord with the ideas employed in

treating the acute medical cases. The cooperation of the patient in avoiding dietary indiscretions is always a factor in securing permanent relief. These people may eat a good rational diet containing all essential vitamin and other dietary factors but they should continue to follow the principle of the "smooth diet" avoiding any and all foods apt to cause trauma to the mucous membrane of the stomach, duodenum, or jejunum especially near a gastro-enterostomy stoma. Foci of infection in the teeth, tonsils, prostate gland, cervix uteri, paranasal sinuses should be eliminated if present.

Ulcer-bearing individuals whether treated medically or by surgical procedure must be instructed to live their lives with caution, especially in regard to the gastro-intestinal tract. In accord with the old dictum of Osler there is a certain advantage toward longevity in those who earlier in life discover that there is "a little of something the matter with them."

3701 Westminster Place.

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Table 1. Analysis of Methods in Series of Cases of Surgical Management in Peptic Ulcer 1928-1932

Operation	Total Cases	Symptom Free	Incomplete Relief	Hospital Deaths Following Operation	Per Cent Operative Motility	Remarks
Gastro-enterostomy	52	46	6 (Mild dyspepsia only persists)	1	1	One operative death in peptic ulcer of duodenum due to vicious circle and intestinal obstruction.
Pyloroplasty	7	6	1	0	0	
Bilroth I pylorectomy	5	5	0	0	0	
Inversion of perforation and drainage	10	2	2 (Gastro-enterostomy later)	1	10	Death due to peritonitis, result of delay in seeking medical advice.
Excise jejunal ulcer	1	1	—	—	—	Followed gastro-enterostomy done elsewhere in presence of acute perforation.
Gastric resection	8	6	2	1	12	Two patients died of recurring carcinoma following gastric resection.

Total number of patients treated surgically, 83. Deaths, 3. Combined operative mortality, 3.6%.

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DISCUSSION

DR. JOHN M. McCAUGHAN, St. Louis: The subject of intestinal obstruction has given rise to an immense literature, both clinical and experimental. Some investigators believe the mechanism of rapid death in simple intestinal obstruction is due to a toxemia; others hold that the cause of death is due to a profound disturbance in water and mineral balance. It might be interesting in this connection to consider the results of some experimental work on the complete drainage of the pancreatic juices by permanent pancreatic fistula. It has been shown that the period of survival after total pancreatic drainage in animals is between five and eight days. The course after operation is characterized by dehydration, loss of appetite and of weight, vomiting and muscular weakness. Blood chemistry changes, such as lowered blood chlorides, diminished carbon dioxide combining power and increased blood urea were observed. As in simple intestinal obstruction the administration of physiologic saline intravenously prolongs life. Apparently moribund animals could be quickly revived by returning the pancreatic juice by mouth.

I cannot believe that toxemia plays any part in the cause of death in experiments of this type, nor can I accept the view that toxemia is a significant cause of death in simple intestinal obstruction where the intestine is viable.

DR. J. W. THOMPSON, closing: These tubes are great things and all kinds of attachments have been invented to drain contents of the stomach and intestine automatically. The idea that the Levin tube acts as a foreign body, that it is something to keep the stomach from resting is not, in my opinion, tenable. I believe the principle of treating hemorrhage of the stomach is identical with treating hemorrhage in any other hollow organ—keep it empty and stop the bleeding. I will even go so far as to do a cystotomy, if necessary, to empty a patient's bladder of clotted blood. Having had considerable experience as a urological as well as gastro-intestinal surgeon, I believe this principle analogous. The idea is not original with me and I do not want to create that impression.

The principle of siphonage to empty clots out of the stomach by means of a tube is at least thirty or forty years old. But with the invention of this little Levin tube that slips easily into the stomach, methods of treating diseases of the stomach have been vastly simplified. The tube does not act as a foreign body, nor does it cause any irritation when introduced through the nasopharynx, if a little weak cocaine or chloral-tone solution is used, and a little petrolatum regularly dropped around the tube. It is true that some sensitive individuals cannot tolerate it, but the thing I want to emphasize is the principle of keeping the

stomach absolutely empty and at rest; the tube provides both. There is continuous secretion of acid in the stomach and the principle of keeping the acid neutralized is a good one, even in hemorrhage.

Regarding the paper of Dr. Orr, and Dr. Bartlett's discussion: The work of Dr. Orr, together with Dr. Russell Haden, is well known over the country. These two men have contributed an enormous amount of energy and thought to the problem of gastro-intestinal obstruction. We must not forget that any mechanical interference with the flow of intestinal fluids causing complete obstruction must be treated surgically. Sometimes these incomplete obstructions will let up under treatment by siphonage, but too much reliance must not be placed on that method as a curative treatment. If the obstruction is definitely mechanical it must be treated surgically.

In regard to this apparatus, employing the vacuum principle for aspirating secretions from the stomach, I have tried them all. They work fine, but not all the time. In fact, I have discarded them and gone back to the use of simple siphonage, aided by a syringe in the hands of an alert and well trained nurse. The exact recording of fluid intake and output in such cases is of vital importance. This can be accomplished by an intelligent nurse no matter what method of aspiration is employed.

CERTAIN DISORDERS OF THE COLON

HARRY G. BRISTOW, M.D.

ST. LOUIS

Merely to enumerate the disorders to which the colon is heir would consume all the time which should be allotted to a paper of this kind. I shall therefore attempt to give only an outline of certain selected conditions with which I have come in contact in the last few years, selected because I consider them interesting though it must be admitted mainly perhaps because the line of treatment has been especially successful. Unfortunately, I will be stating nothing new but I do hope to bring home to you the point that if one line of treatment is not efficacious in the management of colon disorders it is well to have another and perhaps even still another. For the benefit of some who may say, "That is what he should have done in the first place," I wish to state that I have done these selfsame things in the first place only to be forced eventually to try something else; which only proves the above contention.

REPORT OF CASES

Case 1. A girl with one hammer-toe on each foot and an apparently benign enlargement of the thyroid gland. In addition, she had a most distressing and intractable eczema on both feet, ankles and lower legs, for which she had been visiting dermatologists for a period of three and a half years. She was referred to me for a bowel condition. A short time

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after meals she would have rather violent intestinal cramps accompanied by two, three, or four watery stools, all in a period of about an hour, after which she would be comfortable for an irregular length of time, maybe until the next meal, though sometimes she would skip one, two or three meals, then the condition would return. This condition had persisted for several months and was becoming more severe. She had been on a very restricted diet at the suggestion of her latest dermatologist, taking no animal protein of any kind. She was very much underweight and incidentally very much discouraged. A complete allergic elimination diet was impractical, as is often the case. Skin tests showed a great variety of positive reactions and attempts to manage a diet from this standpoint showed some improvement but failed to be entirely satisfactory. Finally she was put on very heavy doses of calcium, i. e., heaping teaspoonfuls of calcium gluconate by mouth, four times a day, reinforced by calcium gluconate intravenously every day for the first few days, together with $\frac{1}{2}$ c.c. of parathyroid extract given subcutaneously every third day. After the third dose of parathyroid she was entirely free from her cramps and diarrhea and her eczema was showing unmistakable signs of clearing up. Because of the improvement in her eczema, the parathyroid and calcium were continued for ten more doses of the parathyroid, at which time her skin was entirely clear of eczema for the first time in over three years. This was over two years ago and to date she has not had a return of the eczema, although after about eight months she did have a return of cramps and diarrhea. At this time she was put on calcium and parathyroid by mouth, which did not correct the condition. However, when parathyroid was given hypodermically for four doses, $\frac{1}{2}$ c.c. every fourth day, the condition was quickly corrected. The same thing happened again some nine months later. Again parathyroid given by mouth gave her no benefit but the relief was almost immediate after hypodermic injection. I may add that she has remained on a partly restricted diet all this time. Only those things which gave the most pronounced skin reactions were eliminated from the diet. Incidentally wheat seems to be one of the main offenders.

Case 2. A young man from Central Illinois having very frequent bloody stools. The condition had existed for over two years with several intervals of remission. He had been treated by several men in various localities. The treatment had consisted variously of high vitamin diets, milk diet, colon irrigations with saline, saturated mag. sulph. solutions, silver nitrate, mercurochrome, neutral acriflavine, courses of emetine hydrochloride and sedatives. Sigmoidoscopic examination showed only an edematous, highly injected mucosa, which bled very easily; there were no visible ulcerations. Barium enema showed only a highly irritated colon. Entamoeba were not found in the stool; stool cultures were not helpful. The man was undernourished, weak and anemic. In view of the history that among his various treatments the emetine had given the best results, he was sent home for bed rest, high caloric, high vitamin feeding, combined with emetine. The result was a gain in weight and cessation of bloody stool as long as he was in bed and taking emetine, but in a very short time after discontinuing this management the condition became rapidly as bad as ever. Subsequent and repeated examination after watery stool obtained by Epsom salts and centrifuging the specimen, the Entamoeba were found. A course of arsenic in the form of nearsphenamine

0.2 gram the first day, 0.3 gram the second day, 0.45 gram the fourth day, 0.6 gram the eighth day, followed by arsphenamine once per week for six weeks, apparently eradicated the ameba infestation as that was two years ago and in the meantime the man has gained forty pounds in weight and has had no recurrence of the intestinal condition. Other arsenicals, especially carbarsone and acetarsone, are I believe especially valuable in the treatment of Entamoeba infestations. There is another chemical which is distributed here and abroad under a great variety of names. I refer to iodo-oxyquinolinsulphonic acid. This substance I believe to be one of our best anti-amebic drugs. Any mention of the treatment of amebiasis would be incomplete without the inclusion of iodo-oxyquinolinsulphonic acid, which may be used alone or in conjunction with emetine or any of the arsenicals. One of the later developments which has proved very efficacious is the use of iodo-oxyquinolinsulphonic acid in conjunction with intramuscular bismuth (water soluble).

Case 3. This patient came to the outpatient department of the old St. Mary's Infirmary six years ago. At that time she gave as her reason for coming to the clinic that she had been sick for seven months and had exhausted her meager funds by doctor bills during that time. She was 57 years old and gave the history of having been costive all her life, but rather suddenly, in July, 1926, she began to have profuse watery diarrhea, at first going to stool every fifteen minutes, both day and night. She could speak only German, therefore the history was perhaps somewhat inadequate, but I gathered that she had been variously treated by diets, bed rest, physics and colon flushes, alternated with opium, bismuth, chalk, tannic acid mixtures, hydrochloric acid and pepsin, etc. None of these measures in the seven months before she came to the clinic had apparently been of more than very temporary benefit. At this time she would start the morning with a hard constipated stool. Successive bowel movements thereafter would be more and more profuse and watery, the later stools being foamy, effervescing and the color of rich cream. The watery stools all had a very foul odor. The total number of stools per day was anywhere from nine to twenty, the diarrhea usually ceasing by late afternoon. Proctoscopic, sigmoidoscopic, roentgenologic examinations, the ordinary stool cultures, yielded no significant information. She had no sores about the mouth and there was nothing unusual in the appearance of the tongue. The gastric analysis showed no hydrochloric acid nor were the usual digestive enzymes present. The usual management for diarrhea was instituted without any special benefit. Colon irrigations with various antiseptics were tried without improving the condition. Later, by special culture media it was demonstrated that the stool was loaded with Monilia. Gentian violet, given in sufficient doses to color the stool, gave no benefit. Finally it was decided, in more or less desperation, to give this woman the Monilia vaccine produced from her own culture. The vaccine was given every other day, starting with 0.10 c.c., increasing 0.10 c.c. each dose. By the time the seventh dose was reached she had lost all her symptoms. After 1 c.c. dosage of vaccine was reached this 1 c.c. was repeated semi-weekly for two weeks when we were forced to resort to mineral oil and cascara on account of constipation. I saw this patient again about six months ago at which time she had a right-sided Bell's palsy. I questioned her minutely as to her bowel condition the last few years and I found that she never had a

return of the diarrhea; in fact, she remained rather costive since she received the vaccine treatment. I am aware that it is claimed that *Monilia* is not a causative factor in intestinal sprue. I am also aware that one can obtain *Monilia* cultures from many people who have no hydrochloric acid in their stomach secretions, but the fact remains that the *Monilia* vaccine is the only thing out of the great number of lines of treatment tried that gave this woman relief after a total of about nine months of diarrhea.

Case 4. Description of a condition which, as distinguished from the ameba, usually begins in the rectum and extends upward, whereas the ameba for the most part infests the cecum and is only found in the sigmoid, colon and rectum in a small percentage of cases, follows: A girl, aged 12, had very frequent intractable rectal discharges of blood, pus and mucus, mixed with fecal matter and undigested food. The girl was evidently undernourished, showing some signs of exhaustion. She had an anxious expression and the appearance of one who had lost a lot of sleep. Temperature reaction was not severe, running however, a mild septic type, with a definite leukocytosis, and a decidedly infective blood picture, that is, with a considerable shift to the left. The stools were negative for ameba and dysentery bacilli. Proctoscopic and sigmoidoscopic examinations showed a very edematous and hyperemic mucosa, with small, yellowish, slightly elevated spots in the mucous membrane. The small miliary abscesses were scattered profusely over the rectum and the visible portion of the colon. Some small miliary ulcers were observed, especially in the rectum and lower sigmoid colon. The whole mucosa bled very easily. Cultures made from the ulcers showed the gram positive diplococci characteristic of ulcerative colitis. The treatment follows: complete bed rest, high caloric diet, with special precautions that the diet be relatively free from residue and nonirritating. I think also that special effort to increase the vitamins of the diet is important. In addition a commercial product, a streptococcus serum for ulcerative colitis, was used. This serum is a preparation made after the immunization of horses according to the method described by Dr. Bergen. The serum was administered daily by intramuscular injection, the dose being gradually increased up to 5 c.c. The relief from symptoms of all kinds was almost immediate. The treatment of ulcerative colitis, either chronic or acute, is I think preferably by the use of the antibody solution (concentrated serum) though autogenous vaccines made from the diplostreptococcus have given very excellent results.

In the diagnosis of colon disorders a detailed history is of the utmost importance. This almost goes without saying. Should you be unfortunate enough to deal with a so-called "mucous colitis" you have my sympathy. The great number and variety of fears, phobias and complaints and the minute details in which obviously unimportant symptoms can be described by those afflicted with this condition constitute one of the drawbacks to the practice of medicine.

Next in order is the complete and thorough examination of the patient, which should include ordinary laboratory investigation. What are the abdominal findings? Is there a tuber-

culous focus in the chest? Is there some other focus of infection? What about the blood pressure? The red count, hemoglobin, hemoglobin index, the white count and especially the Schilling differential? Is there an eosinophilia? Is there a remarkably infective blood picture out of proportion to the apparent physical condition of the patient and the total white count? If so, it is probably a bacillary dysentery. I have seen the diagnosis of typhoid fever made on the Schilling blood count alone, later, of course, confirmed by the Widal.

The next step is to learn what information can be gained from the examination of the stool. The number, the character, the consistency, the frequency, and the time of stools, should be determined. Is there mucus and what is its nature? Is there blood in profusion or is the stool sanguineous or merely streaked or tinged with blood? Is there occult blood? Look for parasites and ova. Perhaps there are amebae. What do cultures show? In this connection permit me to say that the facilities of an absolutely reliable laboratory are indispensable in the diagnosis of colon disorders, and it is to be hoped that the laboratorian can be used as a consultant not as a mere receiver of specimens.

Next in order comes proctoscopic and sigmoidoscopic examinations. These examinations should be preceded by cleansing enemas taken a few hours before. The value of such an examination is very great, both from negative and positive standpoints, and the opportunities that it offers for direct observation, direct cultural studies, or for obtaining biopsy specimens are obvious.

I have in mind three cases which were referred to our offices in the last few months with a diagnosis of colitis. All were relatively young, the youngest being thirty-two. All were having more or less frequent bloody stools with mucus, sometimes mixed with fecal matter and sometimes not. Sigmoidoscopic examination revealed a perfectly normal apparently healthy mucosa, as far as a view could be obtained. In two of the cases examinations at the upper reaches of the sigmoidoscope a little fresh blood was seen. It remained for the roentgenological examination to fix the diagnosis, which in each instance was carcinoma. Roentgenoscopic and roentgenographic examinations should be deferred until after other examinations mentioned are completed. Barium often remains in the digestive tract for an unreasonably long time and its presence would constitute a considerable handicap in other investigations.

In conclusion I wish to state that I have tried to avoid any formal "textbook" description or discussion of any special topic. One can find

these in his own library. I have preferred instead to outline a successful management in four different kinds of disorders which might come under your care at any time. These are, namely, an intestinal allergy, successfully corrected by the use of parathyroid and calcium; it is to be noted that parathyroid must be used hypodermically; an ameba infestation which was never more than temporarily improved by emetine but was apparently corrected by arsenic; a case of diarrhea of several months' duration which was apparently cured by Monilia vaccine after all other measures had failed; and an ulcerative colitis in which the Bagen serum was apparently the curative agent. In only one of the examples cited has the method of treatment been limited to only one case. I refer to the use of the Monilia vaccine. However, even in this instance, I have been indirectly connected with two similar cases where the same method proved of equal value.

817 University Club Building.

TRANSURETHRAL PROSTATECTOMY; INDICATIONS AND LIMITATIONS

J. HOY SANFORD, M.D.

ST. LOUIS

Much has been written on the merits and demerits of transurethral prostatic surgery. Some writers are enthusiastic supporters of this procedure in all types of obstruction and have practically discarded open surgical removal of the gland. Other writers are loud in their praise of transurethral surgery in selected cases but much prefer open surgical removal of the gland in the larger obstructions. Its usefulness in minor obstructions is universally accepted. It is at once apparent from this divided opinion that the replacement of prostatectomy (open surgical removal of the prostate gland) by the cautery punch or resectoscope is not generally accepted; in fact, a majority prefer surgical removal in the larger obstructions.

Some men of unquestioned reputation and ability advocate transurethral surgery as preferable to prostatectomy for the following reasons: (1) End results equally as good as in prostatectomy; (2) much safer and with reduced mortality; (3) less systemic and local reaction, (4) much less hospitalization, hence economy.

Other men of equal reputation and ability recommend transurethral surgery in selected cases as a most admirable substitute for prostatectomy, but doubt its usefulness in the larger

obstructions for the following principal reasons: (1) Inability to remove successfully sufficient gland in single or multiple resections to give the desired end results comparable to surgical removal; (2) possibility of recurrence; (3) danger of sepsis and hemorrhage, especially sepsis, in doing such massive electrocoagulation in an infected field with disturbed renal balance in the majority of cases; (4) the obscurity of certain parts of the gland in this particular type of attack, with a disturbance of the original cystoscopic picture, only later to find single or multiple intrusions become manifest requiring further attention, thus constantly adding insult to an already infected field; (5) danger of infection in a closed bladder without adequate drainage (this applies only to large obstructions necessitating extensive electrocoagulation), (6) full appreciation of its being a major surgical procedure requiring unusual skill and as yet without sufficient supportive evidence to be accepted by the majority and certainly not devoid of serious complications.

Those advocating replacement of prostatectomy with transurethral surgery have this to say about the exponents of selectivity of cases, viz., lack of material and the training to develop personal adaptability, this personal adaptability being the necessary requisite for attacking any and all types of obstruction; a gentle hint is passed along that in doing selected cases you admit your inferior skill and thus fail to realize your ambition to relegate prostatectomy to the scrap heap; they condemn their opponents for citing results, complications, etc., when a majority have done relatively few cases and thus claim their views are a personal discredit to the operator and not the instrument or operation; they further state that most complications and deaths are influenced by bungle-some work done by inexperienced operators, thus inviting criticism, confusion and discredit on a marvelous surgical achievement.

In rebuke, those advocating selected cases for transurethral surgery with open surgical removal in the larger obstructions have this to say about the exponents of transurethral surgery in all types of obstruction: (1) Enthusiasm on the part of some transurethral advocates to the point of indifference to the long accepted worth of prostatectomy (suprapubic or perineal) and to the years of efforts to establish this type of prostatic surgery on a firm basis; (2) the susceptibility of the medical profession to jump at conclusions from numerous articles appearing in the journals with spectacular claims and flamboyant reports of the marvelous achievement of some operative procedure or drug

which in a couple of years is either relegated to oblivion or the percentage is cut to an astounding degree; (3) a factor in relation to such a spectacular operation as transurethral surgery is the psychological spirit that is instantly born in some operators. The good news is spread from every housetop and soon the layman has demanded the punch or resection, regardless of his case. They add, this has prompted some men to take up transurethral surgery, fully appreciative of its value in minor and moderate obstructions but viewing the larger obstructions with skepticism and finally accepting its possibilities as a matter of self-protection due to the trend of thought so prevalent among practitioners today (prostatectomy an obsolete operation); (4) the desire for leadership on the part of the physician to become recognized in his particular community as the leader in that field of surgery, a very commendable attitude but one that is conducive to fallacious statements when the fruits of his endeavors begin to materialize, patients and not always results representing his endeavors, (5) every new operation is twisted and distorted when original ideas are manufactured at random and rushed to press, and out of this conglomeration of the good and bad will emerge sooner or later the place in urology that transurethral surgery so justly deserves.

Respecting the opinions voiced on both sides, the writer's attitude has been to adhere to selected cases for transurethral surgery until he could perfect his technic beyond criticism; and in following out this plan not only do justice to the patient and himself but continue along the lines best suited to get good results, in his individual case, until the cloud of skepticism has cleared regarding 100 per cent usefulness. I am convinced that 75 to 100 operations should be done before anyone classifies himself as a capable resectionist (this applies to any type of instrument used). Besides perfection of technic my conservatism was further influenced for the following reason: Are we justified in subjecting these old men with cardiorenal changes to prolonged instrumental manipulation plus massive electrocoagulation with associated infection and slough, this additional insult being added to an already infected urinary tract in the majority of cases? (This applies to large obstructions only.)

Finally, when one sees an occasional recurrence after total removal of the gland by competent surgeons it is only fair to assume recurrence by the transurethral route will be much more common. It may be definitely shown in the future that personal adaptability to do a real job in all types of obstruction, thus reducing the

possibility of recurrence by the transurethral route, will be realized and may eventually make this type of operation a specialty within a specialty. Certainly men with enormous clinical material at hand will become more proficient than those less fortunate. Time alone will solve these problems and prove one or the other group wrong, or a chosen few may be able to replace prostatectomy successfully by transurethral surgery regardless of size.

In the first place, it is only natural to find the profession divided on a new operative procedure. Deviation from a surgical procedure of long duration and accepted worth always promotes vigorous discussion. In fact, it may never receive universal recognition as an unquestioned substitute for prostatectomy because some men while willing to admit its comparative usefulness in satisfactory release of obstruction will still feel it is a surgical procedure they are unwilling to sanction. The teaching for years of the entire removal of the prostate gland as being essential for cure is the bone of contention today, though minor obstructions were long ago recognized as out of proportion to the amount of surgery necessary in accomplishing this result.

The advocates of transurethral surgery in large obstructions claim it is only necessary to remove the obstructing portion of the gland and feel that this can be accomplished with precision. They further feel that repeat operations are preferable to prostatectomy and are justifiable, due to its incomparable risk. After Young's punch began to show its effectiveness in minor obstructions, principally bars and fibrotic vesical necks, its popularity was doomed only because of hemorrhage and sepsis. Caulk's modification of Young's punch in 1920 revived enthusiasm as his cutting cautery blade diminished hemorrhage and sepsis to a reasonably satisfactory degree, sepsis I believe more than hemorrhage. Caulk called attention to bladder neck transformation under drainage and advanced the theory that most of the prostatic tissue was inflammatory hyperplasia and not true adenoma. This one feature alone popularized transurethral surgery as a formidable opponent to the surgical removal of the prostate gland. If his theory is correct, I believe in time the punch or resectoscope will replace prostatectomy; but if it is inflammation and infection superimposed on true adenoma, I think prostatectomy will be the method of choice in the larger obstructions where permanent relief is to be expected with proper protection to the upper urinary tract as the kidneys suffer the most damage in prostatic obstruction especially of an advanced type.

Various devices began to make their appear-

ance, the work of original designers until there are many instruments in use today each designer claiming as good or better results than by previous models, until the McCarthy resectoscope seemed to come nearer meeting popular demand and today is probably the most widely used. The confusion started about this time as to selectivity of instrument (cautery or electric cutting loop) and as to types of obstruction best suited to surgical attack. The instrument problem I believe is purely a personal equation but the type of obstruction best suited for the work is the bone of contention. I might say that the men using the cautery method in preference to the electric cutting loop claim that sepsis is much less likely with the cautery. It may be apropos at this time to explain briefly to the profession at large what transurethral surgery signifies. Transurethral surgery, better known as the punch or prostatic resection, is the removal of the obstructing part of the prostate gland with instruments passed through the urethra. This is carried out either by the cutting cautery blade or electrically controlled loops which remove the obstructing tissue under direct vision and without recourse to open operation. Another brief explanation about prostatic obstruction at this time may clarify the minds of some on a phase of this subject not generally understood. Some obstructions classified as minor or moderate, such as contracture of the vesical neck or median lobe, may give all the symptoms (residual to complete retention, etc.) that a large prostate produces.

My theory in regard to the inflammatory feature of the prostate gland is that it is a superimposed infection, inflammation, edema, spasm, etc., on top of true adenoma and the reason for shrinkage following drainage is that the bladder was put at rest and as a consequence infection, inflammation and its associated symptom complex urgency, tenesmus, spasm, etc., is diminished or totally disappears and as a result the prostate intravesically and per rectum subsides to varying degrees. Caulk feels that further shrinkage is accomplished by removing multiple tissue which releases infection and establishes more drainage. Occasionally you can take this type of case and give a certain amount of drainage and remove the catheter and the patient will void reasonably well and in a few instances be restored to normal. When normal restoration of urinary function occurs in this type of case it of course should be considered an acute inflammatory prostate. This same type under suprapubic drainage will shrink to an even greater degree which further proves to my mind that with no catheter in the urethra the superimposed infection rapidly diminishes as

the bladder neck is completely put at rest with nothing foreign in the urethra and the infected urine diverted from its natural path. There are instances even under drainage, urethral and suprapubic, where the prostate scarcely changes in size, but in most instances you will be surprised when you come to the enucleation to find marked difference in size as compared to the original picture. In some of these cases, however, that have shown such marked diminution in size under urethral and suprapubic drainage you will be astonished to find how much prostate will be enucleated. Then, again, the picture will be just the opposite. You will find little prostate to remove. This is why cystoscopy is so important before and after drainage, particularly after drainage. Some transurethral advocates do a primary cystotomy in the large obstructions followed by the punch or resection later. I can see no excuse for this method except possibly in patients that have shown themselves to be poor surgical risks after the cystotomy had been done. My experience has shown cystotomy to be the more formidable in the two-stage prostatectomy than the enucleation, in the majority of cases. We not infrequently see this acute inflammation and infection superimposed on a carcinomatous prostate to such an extent it is only recognized at the time of enucleation. The men who feel that the prostate is a fibro-adenomatous hypertrophy claim that you are doing a partial prostatectomy when you remove only the obstructing portion of the gland. These contenders claim that adenomas of the thyroid gland, kidney or stomach can recur when partially removed, hence we can not say at this time in obstructive enlargement of the prostate due to fibro-adenomatous hypertrophy, especially of large size, that permanent or complete relief of the obstruction is possible when the present procedure of transurethral attack does not remove the entire adenomatous portion of the gland. It is not uncommon to see some patients with large prostatic obstructions resected or punched have considerable temporary relief, due no doubt to previous catheter drainage, removal of single or multiple tissue which invites subsequent shrinkage from release of infection and further postoperative drainage, but soon have a return of symptoms, perhaps not as pronounced as previously but certainly sufficient to require either constant postoperative catheterization at intervals or further resection or punch. This proves to my mind that the improvement from bladder rest under catheter drainage plus operation and further catheter drainage was a superimposed acute inflammatory condition and had a tendency to recur as soon as the normal urinary function was put into action. Of course the

possibility of the removal of insufficient tissue is to be considered. The ideal accomplishment in these cases would be the removal of sufficient obstruction to relieve these individuals in one operation not only temporarily but permanently. If this can be done as effectively as in prostatectomy and with much less risk with end results comparable to prostatectomy I would say that transurethral surgery is certain to replace prostatectomy. In the larger obstructions, especially those with a fair to moderate and very high residual with back pressure symptoms and in most instances cardiorenal changes, blood chemistry disturbances, kidney function diminution, urinary sepsis and secondary anemia to a moderate or marked degree, are to my mind dangerous subjects for transurethral attack. Single or multiple resections or punches in these individuals where you add insult to an already badly infected urinary tract are much more prone to sepsis than total surgical removal of the prostate gland unless their condition is such that prostatectomy is contraindicated and resection or punch is done to a moderate degree for palliative purposes only.

In the larger obstructions where a cure is contemplated in one sitting, I cannot see where this massive electrocoagulation is free from serious consequences, especially hemorrhage and sepsis. In this same type of obstruction where multiple resections or punches are done I still feel that it offers serious consequences. The majority of the larger obstructions are accompanied by a vicious train of urinary symptoms and infection with a distinct disturbance of the cardiorenal balance. The total removal of the prostate by suprapubic or the perineal route was designed not only for complete relief of the obstruction but it is a surgical principle adhered to in all surgery, "open drainage where infection is present." No one can deny that prostatectomy meets this requirement in every respect and that accounts for the difference in the end results of the two methods. I have never seen removal of a large obstruction by resection or the punch where the patient to begin with was septic and required considerable drainage, compare in end results to prostatectomy. I not only mean the comparison from the standpoint of restoration of urinary function which of necessity includes a good stream, proper force, no residual and a reasonable or satisfactory freedom from infection in the urine, but most of all the patient's general health and appearance. This difference is the one conclusive proof that open surgical drainage with complete removal of the prostate gland offers irrefutable evidence in favor of prostatectomy.

Transurethral surgery offers substantial preference to prostatectomy in many instances but

in my opinion in some essential comparative merits it is woefully lacking. In minor obstructions it is the operation par excellence. This includes minor obstructions with definitely advanced symptomatology and as a prophylaxis or preventive in early obstructions with few symptoms other than slight change in size of stream, some hesitancy, arising once or maybe twice at night, but with clear urine, no residual or possibly $\frac{1}{2}$ to 1 oz., no blood chemistry changes or kidney functional disturbance. It is in these early obstructions that one hesitates to advise surgery, although as a remedy for prevention of future obstruction with its associated cardiorenal disturbances transurethral surgery may find its greatest usefulness. It is certain to call the attention of the profession and the laity to the importance of seeking early intervention and thus accomplish two things, viz., reduction of prostatectomy and much suffering and damage to the urinary organs. Our present hesitancy in advising surgical interference on such fit subjects is due to the possibility of serious complications, such as hemorrhage and sepsis. I am convinced that many such operations are done at various clinics throughout the country and included in their statistical study as they are more likely to have these patients accept operation at the clinic since the patients are there for a short period and realize that further observation will necessitate returning.

In moderate obstructions I am willing to recognize the usefulness of transurethral surgery but the obstructions must be very moderate and not classified as large. In carcinoma of the prostate where obstructive symptoms are present transurethral surgery is admirably suited unless one is inclined to attempt Young's massive perineal operation. Postoperative tags or small lobules are easily removed following prostatectomy. In the large obstructions I am convinced, at least for the present, that prostatectomy offers the best end results. Caulk recently stated that in the very large prostates (grade 4 and possibly some of grade 3, on a scale of 1 to 4 and where they were good surgical risks) prostatectomy is preferable to the punch. He says, while it is unquestionably true that a majority of these can be cured with the punch, it is necessary to repeat the operation a number of times and the time element is often prohibitive. Of course, if the subject is a poor surgical risk he believes it is necessary to do the best we can and not subject these individuals to too much surgical strain. Under such conditions he relies on multiple repeat operations doing a little at a time in order to prevent hemorrhage and absorption.

Classification of the types of obstruction is

an individual problem. What I would classify as large others might consider moderate, and vice versa.

Transurethral surgery offers many attractive advantages over prostatectomy except in some of the essential end results, which after all are the most important. Perfect accord as to the preoperative preparation of these patients is the one problem that seems to be generally accepted by the profession. The preparation is the same as in prostatectomy and is most important. There is not much difference in anesthesia, except the minor and moderate obstructions that I have done by the transurethral route, twilight anesthesia in most cases has been quite sufficient. It has always appeared to me that when you give these people spinal anesthesia or a general anesthetic you have made it a much more formidable procedure. I can appreciate the importance of spinal anesthesia in the larger obstructions, as complete relaxation is essential.

The time consumed in operation is practically the same unless the transurethral operator is unusually slow or extremely accurate in seeing that all obstructing tissue is removed and bleeding thoroughly controlled. The time element has improved in transurethral surgery by speed and multiple punches and resections rather than removal of too much tissue at a time. Prolonged instrumental manipulation with massive electrocoagulation or cauterization covering a large territory is not only a formidable procedure but is dangerous. Production of marked sepsis must be given consideration in this type of surgery.

I believe shock is considerably less in transurethral surgery than in prostatectomy except in rare instances. The complications appear to me as being more frequent and more severe in transurethral surgery than in prostatectomy. This applies to hemorrhage and sepsis, particularly sepsis. Sepsis has been greatly diminished in prostatectomy since the two stage operation has come into effect and if the operator will use good judgment as to the best time to operate this complication will be seen much less frequently. This principle applies to perineal prostatectomy.

The postoperative care is about the same in the two types of surgery but the convalescence as a rule is immeasurably shorter in transurethral cases than in prostatectomy. Hospitalization in the majority of cases is much shorter in the transurethral subjects than in prostatectomy and patients are considerably more comfortable. The exceptions to this rule are transurethral cases complicated by hemorrhage or sepsis and in those requiring repeat operations. Economy in hospitalization in the above type of case is lacking when put on a comparative basis

with prostatectomy. Shorter convalescence and hospitalization with no open surgery is the big selling point in transurethral cases but the question arises, are we sacrificing end results for economy?

The postoperative treatment or care in transurethral cases is out of proportion to that required in prostatectomy. At this point I should like to add an important procedure in the beginning of the postoperative treatment of transurethral cases. My practice has been to remove the catheter at no stated time but let it be an individual problem in each case. Assuming that I am ready to remove the catheter postoperatively I fill the bladder with a specified amount, remove the catheter and if the patient fails to void a good forceful stream and is unable to urinate the amount of fluid that was just injected I immediately replace the catheter as I feel that his obstruction has not been sufficiently removed or the secondary swelling subsequent to the operation has not subsided. In doing this you may avoid serious hemorrhage and sepsis, especially hemorrhage, for the patient is sure to have considerable straining and spasm which may invite serious bleeding. The medication necessary in a large majority of cases to relieve local sepsis and in some instances systemic is far greater than in prostatectomy. Infected urine and in some cases foul urine that is present in the transurethral cases is much more common. In some cases the urine clears rapidly while in others it is very resistant to treatment which indicates the septic absorption present and in the majority of cases points to the kidney. This picture is not so common after prostatectomy. The pasty pallor and anemia present in a good many of these septic individuals preoperatively is still present to a varied degree after transurethral surgery and in a few cases is more pronounced. This is significant evidence of unrelieved sepsis and for all we know, additional insult; quite a different picture from a comparative prostatectomy where open surgical drainage has caused a marked diminution or practically total disappearance of sepsis. Operations done by transurethral route especially those from adjacent cities or states are in need of much closer follow-up than in prostatectomy. This is made necessary by the long indefinite treatment required in many instances to clear the urine which is kept infected from postoperative prostatitis and seminal vesiculitis in some cases and pyelonephritis in others with the combination of the two in some. This occurs in prostatectomy but certainly not as frequently. Again, while some of these patients are better in many respects they still suffer from obstruction and while they may carry no residual or possibly a small

amount, their stream is far from normal. This type of individual is still subjecting his urinary mechanism to abnormal pressure and continues to suffer further damage to his urinary tract. In such a condition he should be classified as a potential prostatic obstruction and will sooner or later require further surgery. The transurethral advocates say repeat his resection or punch until the desired result is obtained. Is it a wise procedure to allow this continued infection and disturbance of urinary mechanism to continue, not to speak of the repeated added insult from instrumental manipulation with hemorrhage and sepsis always lurking in the dark? It is characteristic of these prostatitics to be satisfied with a poor to a fair stream, a little dribbling and nocturia from two to four times. This can be accounted for by the comfort in some cases to have any stream at all and in others moderate improvement is quite satisfactory. For this reason I have always thought that statistics gathered from questionnaires on this subject were inaccurate. Not much economy is present in the distant patient where several trips and hospitalization for repeat operations are necessary. Besides this factor, a good many of these patients do not return at all as they are either satisfied with an imperfect result or seek advice elsewhere. A vigorous follow-up system with commanding respect for the individual operator or clinic is essential in giving this type of patient what prostatectomy has to offer at one time. I maintain this type of surgery for the lesser light is oftentimes a decided detriment to both patient and operator. I know of no operation in urology that is as spectacular and self-satisfying as the punch or resection. To display the spoils of the day in a bottle brings astonishment from the patient and much glee and happiness to the operator, but how about the end results? Oftentimes the end results are totally lacking, though for the moment or possibly for many weeks or months much enthusiasm is waxed by both parties concerned, and then the inevitable happens. A disgruntled patient returns and accepts further transurethral surgery with skepticism and discontent. In my opinion there is much to be learned in regard to the exact factors causing obstruction and this accounts for poor results occasionally seen, even in some of the small obstructions which appear to be admirably suited for transurethral surgery. I also believe urethroscopic interpretation has been neglected and in some of the cases seemingly well suited for transurethral surgery as cystoscopically studied, the intra-urethral lobules are more consequential than the vesicle neck intrusions. Urethral surgery should be done with caution as serious complications are easily invited.

CONCLUSIONS

1. Individualizing the prostatic patient as to the type of surgery he is best suited for (transurethral or open surgical removal) appears to me as being wise and sound logic.

2. Transurethral surgery is here to stay. In a goodly percentage of cases it is admirably suited. In the larger obstructions as studied by a cysto-urethroscopic examination and found alone or in combination which represent large lateral lobe involvement with a deep cleft above, marked median lobe enlargement or decided intra-urethral encroachment, open surgical removal of the gland is my choice.

3. Finally, I should like to pay my respects to such eminent authorities as Caulk, Davis, McCarthy, Braasch, Bumpus and Thompson, Alcock, Folsom, Kretschmer and others who at present seem to have taken the lead in this class of work and in whom a personal adaptability to do all types of obstruction has been developed. Either they will eventually realize the inefficiency of transurethral surgery in the large obstructions, or make such conservatives as I recognize our inability to develop this personal adaptability or put more effort into its accomplishment when once convinced.

If transurethral surgery in the larger obstructions proves as good in immediate and late results as prostatectomy and appreciably reduces the mortality rate then I think we will have reached a degree of perfection in this type of surgery that would be unchallenged.

I have consistently followed the old adage. "Never be the first to accept the new nor the last to discard the old."

3720 Washington Blvd.

DISCUSSION

DR. J. E. BURNS, Kansas City: I think we are greatly indebted to Dr. Sanford for his very excellent and impartial presentation of this subject, and I agree with him fully that transurethral resection is all right in selected cases. When Young's punch was first brought out and its use was confined to cases of median bar and contracture of the vesical neck, we found that we had very little if any trouble with hemorrhage or infection and the patients got along excellently. Wherever true benign hypertrophy was present and the punch was used there was always more hemorrhage and the danger from infection was greater. The later instruments, the cautery punch and resectoscope, have added two other classes of cases that can be treated with good results. I think in cases of moderate sized or small median lobes the resectoscope can be used safely. In carcinoma of the prostate, unless conservative perineal prostatectomy is done with removal of sufficient tissue to establish urinary drainage, the resectoscope can be used to advantage. With the old straight punch, if there is much bleeding after the operation, the procedure of inserting the operating cystoscope and fulgurating the bleeding points immediately is a good procedure, for

the tissue necrosis is small compared to the large amount of necrosis caused by electrocoagulation in using the resectoscope.

In regard to carcinoma of the prostate, I might say that with conservative prostatectomy and removal of sufficient tissue to insure free urinary drainage, the patients have done remarkably well. I have one who had his prostatectomy seven or eight years ago and is now just beginning to show a rapid decline. This man has lived quite a long time and has been perfectly comfortable.

As to the shortening of hospitalization, I do not feel that any procedure is justified for this reason alone unless the end results are as good as with the other methods of treatment. These patients, particularly those with a fair or large amount of residual urine, should receive the same preoperative treatment as if we were to do a prostatectomy—the same drainage, the same study of the blood chemistry and kidney function. These are the reasons the death rate in prostatectomy has been so markedly reduced. If these steps are ignored merely to shorten the hospitalization I feel that we are not doing our full duty to our patient, and I am sure that under these circumstances the mortality will be higher. Seventy per cent of prostatic cases are infected when they enter the hospital, but strange to say the patients who have become immunized to their infections get along better than those who are uninfected. Of course, with prostatectomy we must have free drainage, whether it be done by the suprapubic or perineal route, and I feel that these patients, even though they may bleed somewhat at times, are much better off with free drainage, and the complications from infection are fewer.

BODY NEEDS PERSONAL CARE; IS SELF RENEWING MACHINE

"The body is a self renewing machine and this fact makes it necessary to think each day about the problem of caring for it," comments Alfred E. Parker in the third chapter of "Training for Athletics and Health," a serial for boys, appearing monthly in *Hygeia*, the Health Magazine.

The minute study of detail which Lindbergh took in preparing his plane before his flight to Paris exemplifies the care which every person should give his own body. A large part of the problem of caring for the body resolves itself into personal habits of eating. Every one has been guilty of putting poor food into his body, but one cannot get new parts each time a stomach refuses to function. One can protect and maintain a healthy engine by eating wisely.

The body needs two types of fuel foods, carbohydrates and fats. In addition the human machine repairs its own tissues and requires proteins. Mineral salts too are necessary in building cells, tissues and body fluids. Regulating foods are a third type. These are found mainly in fruits, vegetables and water. Then, too, certain deficiency diseases are known to result when vitamins are lacking.

An underweight boy can increase his weight and energy by eating energy-producing foods, including starch, sugar, and fat, such as rice muffins, cereals, biscuits, crackers, bread, macaroni, peanuts, salad dressing, oil, cheese, butter, creamed potatoes and milk.

THE SCHILLING DIFFERENTIAL IN INFECTIONS AND IN HYPER- TROPIC (DEGENERATIVE) ARTHRITIS

CHAS. LEROY STEINBERG, M.D.

ROCHESTER, N. Y.

A cursory study of the arthritides will soon convince one that a sharp classification is quite difficult. This is particularly true of the various forms of chronic arthritis. Steinbrocker and Hartung¹ recently stated that the nonfilament polymorphonuclear count was abnormally elevated in 100 per cent of fifty cases of rheumatoid arthritis (atrophic or proliferative) and only 48 per cent in fifty cases of osteoarthritis (hypertrophic or degenerative) which they studied. Cecil² in a recent article suggested that very little work on the blood differential of arthritis has been done, and that perhaps more study in this field would aid in the differential. Pemberton³ in his book on arthritis does not mention the immature neutrophilic polymorphonuclears as a possible means of differentiating infectious from hypertrophic arthritis. Schilling⁴ states that in rheumatoid conditions only slight changes in the hemogram are found. "Rheumatic infections are differentiated by reason of very slight blood findings; other chronic infections without fever are often detected by the markedly infectious blood picture." In a pamphlet issued by a subcommittee of the American Committee for the Control of Rheumatism,⁵ entitled "A Rheumatism Primer," we find the following statement: "With the increase of leukocytes (in atrophic arthritis) will be found a higher percentage of the so-called immature forms." Whereas, as regards hypertrophic arthritis, "the blood picture is usually approximately normal."

Out of a group of one hundred fifty cases that were under observation or treatment for arthritis during the last two years at the Rochester General Hospital, twenty-six were selected for Schilling blood differential studies because of definite organic findings in the joints. The classification of arthritis employed in this article is that recommended by Cecil.² Schilling differential studies were carried out on these selected cases. The clinical history, age, physical findings, radiographic studies, smears and cultures (when possible) were used to classify the group. Of the twenty-six patients we find seven cases of hypertrophic arthritis and eighteen individuals presenting the picture of infectious arthritis. One patient gave a mixed picture of infectious and hypertrophic arthritis. The youngest member in the hypertrophic group

From the Department of Medicine, Rochester General Hospital.

was fifty-three and the oldest seventy-two. The average was fifty-nine years. The youngest member in the atrophic group was twenty-one and the oldest sixty-six. The average was 38.2 years. The organism was fairly definitely established in seven cases of this latter group. Three were gonorrheal in nature, four had hemolytic streptococcus in the tonsil or in the joint. In the rest the organism was not isolated.

Table 1. Hypertrophic (Degenerative) Arthritis

Initial	Age	Sex	Duration	Count	
N. M. P.	61	F	21 years	RBC 4,200,000 Hb 80%	WBC 6200 Eos. 1% Segs. 68% Lymph. 26% Mono. 5%
C. A.	72	F	Many years	RBC 4,420,000 Hb 85%	WBC 5600 Segs. 68% Lymph. 26% Mono. 6%
C. L. G.	53	F	Many years	RBC 5,020,000 Hb 100%	WBC 5350 Stabs 3% Segs. 73% Lymph. 24%
J. F. Q. (Mixed arthritis)	44	M	20 years	RBC 4,520,000 Hb 91%	WBC 6450 Eos. 3% Juv. 2% Stabs 7% Segs. 52% Lymph. 34% Mono. 2%
L. N.	55	M	6 months	RBC 5,120,000 Hb 91%	WBC 4450 Eos. 2% Stabs 6% Segs. 70% Lymph. 22%
J. M.	64	F	5 years	RBC 4,520,000 Hb 98%	WBC 9250 Segs. 68% Lymph. 36% Mono. 6%
G. L. S.	54	M	Unknown (X-ray evidence)	RBC 4,720,000 Hb 94%	WBC 7150 Eos. 2% Stabs 2% Segs. 66% Lymph. 30%
R. B.	54	F	5 weeks	RBC 4,350,000 Hb 80%	WBC 6800 Eos. 8% Stabs 3% Segs. 45% Lymph. 37% Mono. 7%

The average white blood count in this group was 6400 per cubic millimeter of blood. One case (or 14 per cent) had an immature neutrophilic polymorphonuclear count above 4 per cent, whereas six cases (86 per cent) were below 4 per cent.

Comment.—This small group of cases agrees with the current literature that there is a definite tendency for the Schilling blood differential in cases of infectious arthritis to shift to the left as contrasted to hypertrophic arthritis. Not only is this true, but the average white blood count is usually higher in infectious arthritis as compared to the hypertrophic type. One very interesting feature in this group is the blood picture in case C. C., for although the white blood count was only 8900 per cubic millimeter of blood, the shift to the left was quite

Table 2. Infectious Arthritis

Initial	Age	Sex	Duration	Count	
J. B. M.	55	M	2 years	RBC 4,020,000 Hb 78%	WBC 6050 Eos. 2% Stabs 5% Segs. 75% Lymph. 17% Mono. 1%
B. R.	47	F	1 year	RBC 5,020,000 Hb 85%	WBC 9200 Stabs 4% Segs. 79% Lymph. 12% Mono. 5%
M. B.	58	F	10 years	RBC 4,200,000 Hb 80%	WBC 9500 Stabs 8% Segs. 65% Lymph. 22% Mono. 5%
G. H.	38	M	6 years	RBC 4,610,000 Hb 76%	WBC 10,150 Segs. 68% Lymph. 29% Mono. 3%
H. G. P.	30	M	6 weeks	RBC 3,980,000 Hb 75%	WBC 6800 Eos. 3% Bas. 1% Stabs 2% Segs. 64% Lymph. 19% Mono. 10%
E. W.	32	F	5 days	RBC 4,670,000 Hb 88%	WBC 10,700 Eos. 3% Stabs 4% Segs. 71% Lymph. 16% Mono. 6%
L. T.	36	F	2 weeks	RBC 4,980,000 Hb 84%	WBC 6500 Eos. 1% Stabs 4% Segs. 67% Lymph. 25% Mono. 3%
A. B. M.	21	F	2 years	RBC 4,030,000 Hb 78%	WBC 4200 Eos. 2% Bas. 1% Juv. 2% Stabs 5% Segs. 33% Lymph. 50%
B. M.	32	F	13 days	RBC 4,520,000 Hb 86%	WBC 9800 Eos. 3% Juv. 1% Stabs 9% Segs. 58% Lymph. 26% Mono. 3%
A. V.	35	M	3 weeks	RBC 4,440,000 Hb 104%	WBC 11,100 Stabs 7% Segs. 72% Lymph. 18% Mono. 3%
A. G.	33	M	2 weeks	RBC 4,220,000 Hb 88%	WBC 8650 Eos. 2% Juv. 3% Stabs 7% Segs. 69% Lymph. 15% Mono. 4%
H. D. C.	47	M	2 months	RBC 4,720,000 Hb 94%	WBC 13,000 Eos. 2% Stabs 3% Segs. 70% Lymph. 21.5% Mono. 3.5%

The average white blood count in this group was 9400 per cubic millimeter of blood. Ten cases (55 per cent) had an immature neutrophilic polymorphonuclear count above 4 per cent, whereas three cases (16 per cent) were below 4 per cent.

Table 2. Continued

Initial	Age	Sex	Duration	Count	
C. P. Chr. Infect. Arthritis + Nephritis (PSP—19%) 20% hemo. strep throat	26	M	1 year	RBC 3,430,000 Hb 57%	WBC 10,650 Juv. 1% Stabs 11% Segs. 72% Lymph. 16%
C. C.	24	F	5 days	RBC 3,990,000 Hb 70%	WBC 8900 Juv. 2% Stabs 20% Segs. 48% Lymph. 30%
E. L. Tonsil-Strep V, Strep H, pneum. and staph. aureus	66	F	3-4 mos.	RBC 3,980,000 Hb 77%	WBC 6600 Eos. 3% Stabs 9% Segs. 57% Lymph. 25% Mono. 6%
V. M.	38	F	8 years	RBC 4,440,000 Hb 79%	WBC 7300 Stabs 6% Segs. 78% Lymph. 26%
M. E. K.	35	F	9 years	RBC 4,110,000 Hb 75%	WBC 6400 Eos. 1% Stabs 3% Segs. 52% Lymph. 39% Mono. 5%
C. B.	36	F	3 years	RBC 4,300,000 Hb 85%	WBC 5700 Segs. 50% Lymph. 50%

marked (2 per cent juveniles and 20 per cent stabs). A high lymphocyte count may be encountered in chronic arthritis, as witness case C. B.* (50 per cent lymphocytosis). Another point of interest in the hematology of arthritis as brought out by Pemberton in his book on arthritis, previously mentioned, was that a persistent eosinophilia of 5 per cent to 8 per cent may be found in some of the more severe hospital cases. In reviewing one hundred fifty records of hospital cases of arthritis in which an ordinary differential count (not a Schilling differential) was done, this fact seems to be apparent.

SUMMARY

1. Twenty-six cases of arthritis, upon whom Schilling differentials were done, are presented.
2. This study agrees with the current literature that there is a definite shift to the left in the Schilling differential in cases of infectious arthritis as compared to hypertrophic arthritis.
3. The Schilling differential may prove a valuable aid in differentiating infectious from hypertrophic arthritis.

Medical Arts Building.

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THE ULTIMATE RESULTS IN THYROIDECTOMY FOR THYROTOXICOSIS

J. CURTIS LYTER, M.D.

ST. LOUIS

From January 1, 1920, until January 1, 1930, the author had opportunity to examine closely 106 cases of thyrotoxicosis, to see thyroidectomy performed in each case, and to study each of the patients closely from time to time since the thyroidectomy. In this way the most recent case has been observed for three years while the first has been observed for a period of thirteen years.

While the series is not a large one, the close study given each patient before thyroidectomy and the close observation under which each patient has been kept following it seem to justify a report of the ultimate results of this valuable procedure in the treatment of thyrotoxicosis.

It is, of course, quite unnecessary to review the almost classical symptoms of thyrotoxicosis since they are generally so well known. In attempting to place a correct value upon the surgical procedure, however, one must bear in mind that patients afflicted with thyrotoxicosis may also have other major or minor illnesses producing symptoms entirely independent of those manifesting themselves in this disease. The appraisal of the value of this method of treatment should be considered with the disappearance only of those symptoms known to result from the disease under treatment. If the treatment is to be recommended to a patient it should be done so with the expectation that most if not all the symptoms due to thyrotoxicosis will disappear following the thyroidectomy. It is well known, of course, that certain symptoms, notably pronounced exophthalmos, are not supposed to disappear, at least not completely. One should be justified, however, in expecting a correction of such symptoms as extreme nervousness with tremor, profuse sweats, tachycardia, breathlessness, loss of weight, nausea, vomiting and diarrhea.

In considering the value of the operation one must remember that frequently following thyroidectomy a state of hypothyroidism is pro-

duced and even, at times, through no fault of the operator, the parathyroids might also be removed and the patient later suffer from tetany.

A careful delineation of the patient's symptoms into two classes previous to the operation whereby note is made (1) of those symptoms known to be produced by thyrotoxicosis, and (2) of those symptoms definitely known not to result from this condition, enables an observer to appraise the value of the operation correctly in the years succeeding its performance.

Certainly the operative mortality must be given serious thought in recommending the operation. The statistics of individual operators vary so widely that an internist is frequently in a quandary concerning the real percentage of mortality. Under my own personal observation have come surgeons who are willing, as one might say, to take an unwarranted risk when medical treatment is unavailing in suppressing the metabolic rate and symptoms to a point rendering the operative risk very slight and when he and the internist believe that thyroidectomy offers the only possible hope of the patient surviving very long. While an operator of this character will necessarily have a greater mortality percentage he will cure some patients who otherwise would succumb to the thyrotoxicosis. This is noted especially among those cases due to toxic adenomata whose metabolic rate and other symptoms do not respond to rest, appropriate diet and iodine.

The present observation and report is composed of one hundred and six patients. Of this number twelve died within one week following thyroidectomy, death being probably due to the thyrotoxicosis plus the surgical operation. Ten of the patients developed a hypothyroidism following the thyroidectomy. The hypothyroidism produced not only a lowering of the metabolic rate to from 15 to 30 per cent below normal, but a gain in body weight, a slowing up of mental activity, dryness of the skin and hair and the other symptoms usually associated with this disease. In each of these patients the administration of thyroid gland in proper amounts restored the patient to a fairly normal state of health; so it seems reasonable to conclude that a sufficient amount of the thyroid gland was not left to maintain a proper metabolism. In appraising this after-effect one must not be unmindful of the fact that, since the entire gland may have been diseased at the time of the thyroidectomy, it was practically impossible for the operator to estimate the proper amount of thyroid to remove.

One other feature shown distinctly in this

series is the tendency for some postoperative hypothyroid individuals to return to a normal metabolic rate several years later. One patient in particular, who was operated on by Dr. Willard Bartlett in 1926, developed a distinct hypothyroidism within four months after the operation. Her metabolic rate at that time was minus 30 while at her primary examination previous to the operation it was plus 65. Under appropriate administration of thyroid gland she returned to a normal metabolic rate. This treatment was continued for about three years when, of her own accord, it was discontinued. A recent examination of her reveals a state of perfect health, with a normal metabolic rate even though she has taken no thyroid substance for over three years. It is more than probable that the portion of the thyroid left at the time of the operation has been able to increase its function to the point of maintaining a normal metabolic rate. Most of the cases, however, who suffer from hypothyroidism following thyroidectomy continue to do so unless relieved by the administration of appropriate doses of thyroid substance. In this series of one hundred and six patients, twenty-two have suffered from various degrees of thyrotoxicosis following thyroidectomy.

The element of time elapsing following the operation before a definite reappearance of thyrotoxicosis is interesting. Some of the patients show thyrotoxicosis immediately after leaving the hospital; others develop it after several months, and two or three after several years. It seems that women entering the menopause have a great tendency to redevelop thyrotoxicosis, even though there was a thyroidectomy for the cure of the thyrotoxicosis years previously. An interesting example of this type of recurrence is shown in the following case:

REPORT OF CASE

Mrs. A., aged 37, had a marked thyrotoxicosis in 1920. Dr. H. S. McKay performed a thyroidectomy. The patient remained perfectly well until the beginning of her menopause at the age of 47, or ten years later, when again she presented herself at my clinic with a typical thyrotoxicosis. There was a distinct hypertrophy of the remaining portion of the thyroid. Under roentgen ray and appropriate doses of iodine she has again become apparently well.

In practically all these cases the health condition has been improved but by no means completely restored. In other words, the basal metabolic rate remains about plus 20 (some as high as 30) and the nervousness, tachycardia, loss of weight, sweating, etc., have only proportionately disappeared. While these twenty-two patients have been benefited to a greater or less

extent by the surgery they have by no means been returned to a desirable state of health. Most of them require the same treatment one employs in preparing a patient for a thyroidectomy, and at times the author has seen some of them improve markedly under the correct application of roentgen ray

It is understood, of course, that the operator is not at fault in this situation. After all, he can only be expected to use his best judgment in deciding on the amount of thyroid substance to remove. Not having at his command an intricate knowledge of the exact condition of the remaining gland his judgment at best must be subject to grave error.

It can be definitely stated that the metabolic rate following a thyroidectomy is the best criterion of the completeness or incompleteness of the patient's recovery since, if the rate is within normal limits, the other symptoms usually disappear. Especially is this true of the vasomotor phenomena.

The effect of thyrotoxicosis upon the heart and the vasomotor system in general does not enjoy today a complete understanding. It can probably be stated authentically that a patient with a perfectly normal heart before the development of thyrotoxicosis will acquire a perfectly normal heart following a successful thyroidectomy. In most cases where the heart becomes markedly enlarged and is the seat of various clinical conditions such as auricular fibrillation, auricular flutter, dilatation and congestive failure, there was a preexisting myocardial disease. Added to the preexisting myocardial disease there unquestionably are functional myocardial changes resulting from chemical changes produced in the muscle cells as a result of the thyrotoxicosis.

It is believed by biological chemists that during the contraction of a muscle fiber a certain amount of its retained glycogen is converted into lactic acid. While under normal conditions about 20 per cent of this lactic acid is utilized in reconvertng the other 80 per cent into glycogen, this proportion may be seriously disturbed in such conditions as thyrotoxicosis and be responsible therefore for many of the cardiac symptoms. One wonders, if this is true of glycogen, if a similar state is not also true of the other chemical ingredients of the muscle cell.

Of the series, six cases had a well marked hypertention, the systolic blood pressure varying from 180 to 240, the diastolic from 96 to 120 mm. Hg. There were twenty-four additional patients who showed a slight elevation of the systolic pressure but in none of them did the systolic pressure exceed 160 mm. Hg. In

this group the diastolic pressure was never above 90 and in many instances was below 80. It has been frequently said that one symptom of thyrotoxicosis is an elevation of the systolic blood pressure and a decided increase in the pulse pressure. It is probable that anyone with the opportunity for rather extensive observation of thyrotoxicosis will agree that an increase in the pulse pressure is a rather frequent finding. An increase in the systolic blood pressure, however, can by no means be considered a symptom of thyrotoxicosis. While it is present in approximately 20 per cent of the patients the rise is slight, or at most only moderate. Marked elevation of blood pressure can usually be explained by some other clinical condition.

The slight elevation of the systolic blood pressure with the lowering of the diastolic pressure thereby producing a rather high pulse pressure, seems to be found in a definite number of cases. This clinical observation is similar to that observed in aortic insufficiency, and probably is best explained upon the premise of vasomotor instability. In those cases having a high pulse pressure in the arm one will always find the pulse pressure in the leg much greater—again an observation noted in aortic insufficiency. Following thyroidectomy the blood pressure will be altered in those cases with a slight elevation of the systolic pressure and a lowering of the diastolic pressure. These have a tendency to return to normal. In those cases, however, manifesting a frank hypertention of the cardiovascularrenal type a postoperative lowering of either the systolic or diastolic pressure of consequence must not be expected. This is as one would expect it to be; since in the beginning the hypertention was not the result of thyrotoxicosis a definite reduction by removal of the thyrotoxicosis is not to be expected.

In the case of involutionary cardiovascular changes with hypertention one usually finds the heart more damaged by the thyrotoxicosis than in cases with otherwise normal cardiovascular mechanisms. For that reason the heart does not return to a normal condition following the thyroidectomy, and the patient usually progresses with the hypertention, his clinical course being the usual and expected.

It is well to bear in mind that in patients with involutionary cardiovascular disease associated with thyrotoxicosis the operative risk is definitely increased and prolonged surgery should be indulged only with due circumspection.

There were three cases of marked psychosis following the thyroidectomy. Two of them were apparently of the hyperplastic type while the third was a toxic adenoma. Two of the

three died; one recovered and now, nine years following the operation, is in a very satisfactory state of health.

It is of prime importance to study the mental background of all thyrotoxic cases, not only because thyrotoxicosis in itself produces many psychic changes but because a preexisting psychopathic constitution renders the study of thyrotoxicosis rather difficult and the prognosis following thyroidectomy quite uncertain. Vaughn has described a thyrotoxic constitution, but his description is of questionable value. Since many cases of thyrotoxicosis have a preexisting psychopathic constitution, at times masked, the clinician must be ever alert to the recognition of psychic changes in all thyrotoxic patients, and should be guarded with respect to his prognosis of the disappearance of psychic changes following thyroidectomy.

The author has never been convinced of a well defined thyroid psychosis in a patient of normal psychic constitution. Experience probably inclines one to believe that all cases of thyroid psychosis really were psychotic before the thyrotoxicosis developed.

Of the one hundred and six cases, sixty-five recovered a satisfactory state of health and at present are able to follow their previous vocations and enjoy whatever remains enjoyable in this world. This percentage of recoveries is much smaller than that given in most surgical statistics. Whether this discrepancy is to be explained upon the basis of the smallness of this series, or because of the very close observation following thyroidectomy one can only conjecture. The thyroidectomies of the series were performed by various surgeons, each one of exceptional ability, the group representing the best of the surgical profession of the Middle West; and while the percentage of recoveries herein described does not seem to be flattering, it must be recognized as the representation of the percentage needing no postoperative supervision other than some general rules with regard to exercise, rest, diet, etc. Again, one must feel that the hypertention cases and the case which developed a psychosis were at least benefited by the operation. Those cases revealing a hyperthyroidism or a hypothyroidism following thyroidectomy have been placed in a satisfactory state of health by postoperative medical attention. Consequently, while the percentage of complete immediate recoveries seems small, it can be readily seen that with competent surgical and medical efforts about 90 per cent of these patients can be placed in a satisfactory state of health. This seems to be about as much as one has a right to expect in

the treatment of a disease so poorly understood, especially with regard to its etiology.

529 Frisco Building.

USES OF ELASTIC ADHESIVE BANDAGE

WM. J. GALLAGHER, M.D.

ST. LOUIS

Before the advent of a cure for leg ulcer when such a patient consulted a physician no treatment gave satisfactory results. All the doctor could do was dress the lesion in the best manner available with greases, antiseptics, etc. Patients would return disgusted and discouraged, knowing as well as the doctor that there had been no progress in their condition. And when such a patient called you groaned inwardly, mentally exclaiming, "Oh, that leg ulcer case." Such were the pathological problems of the profession in regard to this disease that it was looked upon with apathy. The disease was unpleasant as well as unresponsive to the then form of treatment and was, therefore, shunned in such manner that any relief that might be given was, when possible to do so, shifted to the nurse for the necessary dressing.

This lack of interest I prefer to regard as a feeling on the part of the physician that the disease was incurable except in its early stage. The patient grew tired of the ineffectual prescriptions and haphazard methods. He sensed the psychological attitude of the physician and righteously felt he could just as well treat himself at home. This he did or else fell into the clutches of the cults and invariably tried out the advertised remedies.

Not longer than ten years ago the profession was not inclined to become interested in the treatment of leg ulcer, but since that time the injection treatment of the veins has been advocated, tried and proved effectual. It did not, however, show 100 per cent cures. This is not to be wondered at since in recent years light has been thrown on the subject as to the reason why the injection treatment was unsuccessful in so many advanced cases. It was not the fault of the injection treatment; rather the treatment did not touch the spot, i. e., the guilty veins were not all reached by the injection because of the edema.

After the injection treatment had apparently more or less fallen into disrepute because it did not cure all cases, along came the elastic adhesive bandage, and the combination treatment

From the Department of Surgery, St. Louis University School of Medicine.

with the bandage and the injection comprise a measure so beneficial that when hibernating cases learn of this cure they will come out of hiding and again seek treatment. It will become a pleasure to take care of this long-suffering people for we can truthfully and conscientiously encourage them. Furthermore, we shall ourselves take personal pride in administering the treatment for we know now that definite results can be obtained.

I shall not dwell upon the causes and effects of varicose veins, as the pros and cons of this subject have been not only largely and effectually gone into by authors of repute but the cause and effect are thoroughly understood by all. We are concerned at this moment only with the ultimate cure to be obtained by this combination treatment of injection and the elastic adhesive bandage.

Wright figured the cost in ten average English institutions from the time the patients applied for treatment until the ulcers were completely healed amounted to from \$45,000 to \$50,000. All such unnecessary expenditure may now be relegated to the page on "ancient history," as the cost of injection and elastic adhesive bandages are almost nil when compared with the cost of gauze, grease, cotton and bandages formerly used.

No one realizes what a curse varicose ulcer is to the working classes; it is much more prevalent than is imagined because most of these unfortunate sufferers, tired of obtaining no relief from the medical profession have endured and are now enduring their complaints, occasionally resorting to quack remedies when the condition becomes too troublesome.

The complications of varicose veins are all attributable not to infection but to an abnormal circulation of the blood in the leg, and of these the most troublesome is varicose ulcer. It does not generally exist alone; phlebitis, periostitis and eczema are also usually present in some degree.

An almost forgotten British genius, Thomas Baynton, surgeon of Bristol, at the time of the French Revolution wrote as follows: "This disease is due to the unfavorable situation of the parts which are placed at a remote distance from the fountains of life and heat, and are obliged to return the venous blood and lymph to the heart under peculiarly unfavorable and disadvantageous circumstances." A simple experiment proves Baynton's contention. A needle connected to a glass tube eight feet long is inserted into any varicose vein; the blood rises instantly to the level of the clavicles. The patient holds his breath; the blood rises to the level of the ears. If he now lifts a heavy weight in both hands the upper level rises far above his

head and the venous pressure is even greater than the arterial.

Differences in anatomical arrangement of the veins in the lower extremities, and other arguments advanced, prove that the pressure exerted on the venous system of the left is greater than that on the right and in consequence the left leg is more subject to static edema and its sequelae, eczema and ulcer. The veins become dilated and the return venous circulation becomes sluggish. This causes impaired nutrition of the tissues and the skin edema lends itself most readily to infection on trivial injury.

McPheeters and Merkert state that the mechanism of reflex flow, with increased downward venous pressure and the consequent waterlogging of tissues with stagnant serum are the prime causes of these destructive and abortive healing processes, though trauma to this area of lowered vitality is usually the active cause of the terminal breakdown and ulceration. The tissues about the varicosities are filled with venous blood and the cells are poorly nourished.

McPheeters believes varicosities in pregnant women are due to an endocrine factor in spite of the many authors who still speak of the pressure of the enlarged fundus. He has proved that the circulation is reversed in varicose veins, incompetent valves, etc. He injects the varicosities in pregnant women at any time during the pregnancy, usually about the fifth month, and has found it to be perfectly safe and the injection relieves the woman of pain and discomfort. His two contraindications are: (1) Presence of infectious thrombophlebitis, (2) debilitating condition.

Following the injection he wraps the leg with an elastic adhesive bandage, leaving it on one to two weeks, and thinks it the greatest single factor in the entire treatment.

Hippocrates and Galen, centuries ago, attempted surgery of varicose veins in the treatment of leg ulcer, and the principle of firm bandaging in varicose ulceration is not a new innovation having first been employed in England in 1790. Thomas Baynton used a homemade lead plaster and changed it once a week. This treatment was stopped due to the frequency of dermatitis. The introduction of zinc oxide plaster has diminished the risk of dermatitis.

The oldest adopted method of strapping an ulcer was devised by Beck. It consisted of strapping the margins of the wound with the object of (1) saving granulations and epithelium from trauma at the healing edge; (2) keeping excessive granulations in check, and thus allowing new epithelium to grow in; (3) allowing for drainage of discharge; (4) allowing the center of the ulcer to be dressed.

Better results were obtained later by strapping the entire wound. It seems the rankest heresy to recommend that the discharge from an ulcer should not be allowed to escape, but in practice it is found that almost all ulcers if hermetically sealed with sticking plaster will heal better than when treated with an antiseptic or stimulating dressing. Baynton discovered this 150 years ago but his method has been almost forgotten, as have possibly other good things in the wave of antiseptics following the discoveries of Pasteur and Lister. It remained to A. Dickson Wright, an English surgeon, to discover that strapping and using considerable compression over the entire lower leg gave almost miraculous results. His paper in 1930 created a revolution in the treatment of leg ulcer. He believes the forerunner of the ulceration is an edema due to accumulation of tissue, lymph and venous fluids, because the inadequate or incompetent channels of the leg are unable to return them to the general circulation against the force of gravity. Reinforcing the natural elasticity of the skin by an adequate support the edema will be reduced and the equilibrium between the fluid entering the leg by the arteries and leaving by the veins and lymphatics will occur; and the tissues will receive their normal blood supply instead of being continually bathed

in venous blood and will be able to cope with all infections, and do so without the use of antiseptics.

Logefeil, who assisted the "A. M. A. Committee on Varicose Veins," prefers the elastic adhesive bandage when treating varicose ulcers which are multiple, hard and irregular, or when much edema or hard induration is present in the leg. He agrees with A. Dickson Wright that it abolishes the venous stasis, diminishes the edema, and this reduces the size of the leg, relieves the pain and heals the ulcer while allowing the patient to be ambulatory.

Patients presenting themselves with leg ulcers should be thoroughly examined, as there are some contraindications for treatment, such as debilitating conditions, arterial disease or thrombosis of the deep venous system.

There is no reliable test to tell if the deep veins are competent. History of femoral thrombosis and observation of the lower limb, after impeding the superficial veins by a tight bandage, will help. If the patient can walk about for one hour without discomfort it is safe to say that the deep veins are patent.

Visible varicose veins are then injected. Injection treatment of varicose veins with sclerosing solution was first started by Pravaz in 1851. Numerous solutions have been used



Fig. 1. Third degree burn of entire leg. Pinch grafts covered by elastic adhesive. Complete healing in three and one half weeks.



Fig. 2. Third degree burn of arm, axilla and chest wall. Wolff, Thiersch and pinch grafts covered by elastic adhesive. Complete healing in five to six weeks.

spasmodically since then, but in the last few years more attention has been paid to this and at present we have numerous sclerosing solutions several of which have been reported successful by different authors. I usually use sodium morrhuate solution. The veins are injected with the patient either sitting or standing. Application of a tourniquet causes engorgement of normal veins and if these are injected embolisms may occur because of the normal active current of blood in these veins. Following the injection the leg is then tightly wrapped with an elastic adhesive bandage beginning at the toes if the foot is edematous, otherwise at the ankle. There is no real danger of putting the bandage on too tightly. Disaster occurs only from this cause if the patient takes it on himself to cut the bandage instead of coming to have it reapplied. As a matter of fact, it is when the bandage is not applied tightly enough that any complaint is heard; in such cases the pain is not relieved and the leg is apt to itch. No fear need be entertained as to the danger of imprisoning the septic secretions of the foulest ulcer. It has invariably been found on removing the bandage after a week that such an ulcer is no longer foul but has become a clean bright carpet of healthy granulations surrounded by a pale-bluish margin of advancing epithelium.

The patient is then instructed to continue his or her daily activities as the edema will leave faster when the part is used. The bandage adjusts itself to the gradual shrinkage of the swollen leg and the pain disappears during the first forty-eight hours. It has been suggested that rest in bed and giving injections will give as good results. Many patients cannot spare the time for this. Moreover, the pain is worse in bed and the ulcers heal less rapidly when dressed with lotions and ointments than when strapped.

The discharge from the ulcer oozes through the bandage and the patient can take care of this by wiping it off or by putting a gauze dressing over it.

The period before returning varies according to (1) the amount of edema; (2) the size of the ulcer and (3) the position of the ulcer.

(1) Where the edema is great the bandage rapidly becomes loose; it may have to be renewed within three days to keep pace with the expulsion of edema.

(2) When the ulcer is very large the profuse discharge will at first necessitate renewal of the bandage twice weekly. Healing is so rapid that the intervals can soon be increased.

(3) When the ulcer lies over the malleoli the movements of the ankle loosen the bandage and more frequent renewals are required.

The interval between the first two visits and also between the successive visits, varies from two days to one month according to these three factors, the usual time being one to two weeks.

At the second visit the bandage is removed by cutting up one side and removing it similar to the method of removing a cast. This is painless because alopecia precedes ulceration in cases of varicose veins and because the discharge has lifted the bandage from the surface of the ulcer; thus no damage is done to new epithelium or granulations and there is no bleeding. At the routine inspection more varicose veins will be seen or felt because of the reduction in the edema; these are injected and the elastic adhesive bandage again applied. Eventually the leg regains its natural form; the bandage then need be applied only firmly enough to maintain it until the time has elapsed for the shrinkage of the dilated tissue spaces.

When eczema develops during treatment it is to be ignored. However, if the eczema develops when the leg has returned to its normal size and firm compression is no longer necessary, a gelatine and zinc oxide bandage is soothing and curative for the eczema and prevents the leg from swelling again.

Skin grafting is performed when the ulcer becomes clean, although this is not essential as the ulcers will heal just as well but more slowly without it. Small pinch grafts are usually used. The grafts are always autogenous and removed from the thigh as a rule. The ulcer is then covered with adhesive in exactly the same manner as before and the grafts "take" with monotonous regularity. On this occasion, as on all others, the ulcer is measured. The decrease in size stimulates both the surgeon and the patient.

The healing changes in the ulcer are noticed within a week, the raised edges are flattened out, the healthiest of granulations appear and the leg rapidly resumes its original size and symmetry.

This elastic adhesive bandage can also be used to good advantage following all types of skin graft (Reverdin, Thiersch or Wolff). It furnishes the necessary compression needed to keep the grafts in their place.

Dickson Wright, after six years' experience with a large series of ulcer cases, was so impressed with his technic that he promised, (1) to cure any ulcer, no matter of how long standing; (2) to relieve all pain; (3) to allow full work and exercise and (4) to prevent recurrence in nearly every case.

The advantages of the compression treatment are: (1) It abolishes the varicose circulation; (2) it diminishes the edema; (3) it thus reduces the girth of the leg in edematous cases and

thereby reduces the width of the ulcer by the same amount before any healing takes place; (4) it approximates the edges of the ulcer; (5) it protects new epithelium and delicate granulations from dressing trauma. The discharge lifts the sticking plaster away from the ulcer and renders removal painless and harmless to the epithelium and granulations; (6) it presses down and softens the raised margins of an indurated ulcer thus rendering it flat instead of excavated; (7) it provides a specific dressing (bacteriophage?); (8) it abolishes pain in the majority of cases; (9) it permits full functional activity and patients who work and take exercise are cured more quickly than those in bed; (10) it saves the expense of dressings and lotions; (11) it requires no particular skill; (12) in early ulcers (up to six months' duration) there are numerous invisible islets of epithelium buried in the granulations; pressure brings these to the surface and they quickly cover the ulcer. Frequently an ulcer of the size of the palm of the hand, if of short duration, will heal within seven days; (13) it cleans the ulcer more quickly than any antiseptic method, and the fetor rapidly disappears; (14) it brings to the surface varicose veins which were deeply buried in edema, thus rendering injections possible which otherwise could not be attempted, and (15) it gives a supple scar which loses its adherence to the underlying bones.

St. John's Hospital.

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THE SEX DETERMINATION TEST OF DORN AND SUGARMAN

Using a pure bred strain of New Zealand white rabbits, Theodore J. Curphey and Anne S. Romer, Brooklyn (*Journal A. M. A.*, Nov. 18, 1933), were unable to confirm the observations of Dorn and Sugarman as to the prediction of sex in the unborn child. The age of the experimental animal and the anatomic location of the testicle at the time of the intravenous injection of the urine of pregnancy apparently plays no part in the matter of testicular stimulation. There is present in the urine of pregnant women a so-called spermatogenic factor unassociated with the sex of the unborn child. The need exists for a further investigation as to a possible relationship between this spermatogenic factor and the toxemic states of pregnancy.

CONGENITAL DUODENAL ULCER WITH PERFORATION

REPORT OF A CASE

ELLSWORTH MOODY, M.D.

JOPLIN, MO.

AND

WALTER M. HOWARD, M.D.

CARTHAGE, MO.

Duodenal ulcer in the new-born is rarely reported. Abt¹ quotes Thiele² who collected 248 cases of ulcer of the intestinal tract in children under sixteen of which 185 were duodenal. Thiele says there are usually no symptoms suggestive of the condition and the diagnosis is usually made at necropsy. Neff³ states essentially the same and calls attention to the persistent vomiting and the characteristic blood in the stool. This case is reported merely for record as it was wholly free from symptoms that would suggest the condition.

REPORT OF CASE

P. N. W., male, a third child, born July 10, 1933. The delivery was spontaneous and without complications. Because of a chronic hyperacidity in the mother and of her inability to nurse her two previous children, this child was put on a simple cow's milk formula. The birth weight at 2:30 in the afternoon was 124 ounces; at 7:30 p. m. the weight was 118 ounces. It took the feeding satisfactorily and the stools were normal but the gain in weight was slow. On July 13 the weight was 119 ounces and was the same on July 14. On July 15 there was some regurgitation but the child gained $\frac{3}{4}$ ounce; the vomiting became more severe and there was a slight diarrhea on that afternoon but the vomitus and stools were negative for fresh or occult blood. By the 16th the weight had dropped to 109½ ounces and the stools were less frequent for the next 24 hours; the regurgitation was not severe and a one ounce gain was registered on July 18. That afternoon the vomiting became projectile in character, the abdomen was quite distended and the stools were quite watery. It was changed to a condensed milk formula and a small tube inserted in the stomach just before nursing which relieved the distention and the child then retained the feedings but the loose watery stools persisted; they were of good color, well digested and negative for fresh or occult blood. He had begun to have a definite "pain cry" by this time which was relieved by luminal in .006 gram doses. By the morning of the 19th his weight had dropped to 96 ounces and there was a very definite increase in the size of the superficial veins of the abdominal wall. There was no change in his condition for the next 48 hours and on the morning of the 21st he had gained 1½ ounces, was retaining food and water and seemed quite comfortable. At 7 o'clock on the night of the 21st, the eleventh day of life, he went into a complete collapse from which he did not recover and in spite of stimulation developed very stertorous respiration and died ten hours later.

Autopsy showed mild hypostasis of the lungs but no other gross lesion of the heart or lungs. The abdomen clearly showed the distention of the super-

ficial veins. The abdominal cavity contained some fluid and flecks of occult blood were seen. The stomach was normal in size and partly filled with the milk formula. The omentum, which was much injected, was glued over the pylorus and first part of the duodenum and there was an ulcer on the posterior wall of the first part of the duodenum about 1½ cm. in diameter. It was cleanly punched out and was practically completely occluded by omentum except for a small leak in the dependent portion. The rest of the abdominal contents were negative so far as gross examination could determine.

This case presents only one new sign which may or may not be important, that is the enlargement of the superficial abdominal blood vessels. The distention was not sufficient to account for this change.

St. John's Hospital.

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A METHOD OF SKELETAL TRACTION FOR NECK EXTENSION

BEN L. NEUBEISER, M.D.

ST. CHARLES, MO.

The writer is not aware of any written evidence of skeletal traction having been applied to the skull. The methods in use at present of traction by a halter or extension by a cast, rings with turnbuckles, etc., are often unsatisfactory because of the recumbent position of the patient, adjacent injuries, encroachment on the anterior surface of the neck, pain and pressure sores.

The method I have devised is simple, efficient, inexpensive and easily applied. It is also painless, can be left in position for a prolonged period and does not interfere with dressings or operative procedures on the neck. The technic of application follows:

TECHNIC OF APPLICATION

The barbs of two No. 8-0 Kirby fishhooks are removed and brought to a gentle point. Under local anesthesia a one quarter inch vertical incision is made in the skin one and one half centimeters anterior to the articular tubercle of the zygomatic process. The point of the hook is guided by touch under the zygomatic arch where it is caught. The curve of the hook alters near the point end and snugly adapts itself to the inner surface of the arch where it lies between the arch and the temporal muscle. A wire is attached to the hook over which is threaded a soft rubber tube sufficiently long to cover the exposed portion of the hook and wire, to prevent irritation of the skin. A similar procedure is done on the other side. A bar is then placed between the two wires, sufficiently wide to prevent pressure on the temporal regions and six to fifteen pounds of weight is attached, depending upon the muscular development of the individual and

the extension required. The hooks can be left *in situ* indefinitely and no dressing is necessary.

The writer has tested the tensile strength of the hooks and zygomatic arch of the skull sufficiently to know there is no danger of fracture of the zygoma or bending the hooks. The hooks in no way interfere with mastication and do not encroach on any important structure.

This method should have a wide range of usefulness in such cases as fracture of the cervical vertebrae, postoperatively after laminectomy for fracture, for osteomyelitis of the cervical vertebrae, tuberculous caries, reduction of dislocations, etc. It could also be used during the application of casts.

CONCLUSION

The writer believes a simplified efficient tool has been added to the armamentarium of the orthopedic surgeon.

The method here described should not be attempted by the profession at large; no more so than should skeletal traction in general.

Hotel St. Charles.

ECONOMIC DEPRESSION MAY BE PRECIPITATING CAUSE

External losses caused by the depression, overwhelming though they may be, are not the sole determinants of the behavior reactions to which they initiate. One man may lose his entire fortune and meet the disaster with a stoicism that excites the wonder of every one. Another person, losing only a portion of his wealth, may brood, become despondent and finally perhaps commit suicide.

In many cases the economic depression is only a precipitating cause for a reaction whose really fundamental causes lie much deeper in the patient's personality.

For these reasons and others it is not safe to assume without further inquiry that these upsets are only a natural objective reaction to a hopeless situation. To one whose self esteem is dependent on the possession of money, economic distress is apt to result in an agitated depression out of which the patient can see no hope. To one who has achieved success, the waning of power makes it difficult to become adjusted to the new ways of life.

When suicidal impulses are present, the wisest procedure is to seek a physician who has had some experience in the management of mental disorders. Members of the patient's family or friends may have biased opinions and will definitely lack background for the solution of the problem. The patient, too, usually is more willing to confide in the doctor than in any one else.

A physical examination by a physician may be of considerable value.

Physical or mental activity is helpful when it is not carried to excess.

Adequate nourishment is especially necessary, because depressed patients are liable to lose their appetite or even to refuse to eat. Adequate sleep is essential too, as sleeplessness undermines the patient's strength and is apt to prolong the depression. Obstinate constipation that frequently accompanies these conditions also requires the physician's careful attention, Dr. Thomas M. French explains in an article entitled, "Emotional Reactions to External Events," in the *March Hygeia*.

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DECEMBER, 1933

ADVISORY COMMITTEE TO THE STATE BOARD OF HEALTH

In pursuance of the request of the State Department of Health that an advisory committee of members of the State Medical Association be appointed to cooperate with the board in matters of a medical nature affecting the practice of medicine, President Allee has appointed the following committee: Dr. McKim Marriott, St. Louis, dean of Washington University School of Medicine; Father Alphonse M. Schwitalla, St. Louis, dean of St. Louis University School of Medicine; Dr. Dudley S. Conley, Columbia, dean of the University of Missouri School of Medicine; Dr. A. R. McComas, Sturgeon, Chairman; Dr. W. H. Breuer, St. James; Dr. Jabez N. Jackson, Kansas City, and the Secretary of the State Medical Association, Dr. E. J. Goodwin, St. Louis, ex officio.

The duties of the committee will be purely cooperative in analyzing problems of a medical nature, when the board calls upon the committee to assist in such analysis.

It is hoped that this intimate relation of the organized medical profession with the State Department of Health will conduce to the harmonious activity of these two important bodies on matters pertaining to the ethical practice of medicine, to enhance the welfare of the people and to aid in the adoption of measures for the protection of the public health.

The Advisory Committee is what its name indicates—a purely advisory body. It will issue no orders of a mandatory nature nor will it obligate the state or county medical societies to perform any specific functions.

Among the highly important duties of the State Department of Health are the licensure of medical practitioners and the inspection of medical schools. These two departments affect the welfare of the people and the protection of the public health so intimately that they should be surrounded with every safeguard for their proper functioning.

It is believed that the cooperation of the Advisory Committee with the State Department of Health in the conduct of these important departments will alone justify the innovation established by the Department in requesting this close correlation of the official health organization represented by the State Department of Health and the voluntary medical organization represented by the Missouri State Medical Association and its component county medical societies. There are however other avenues of activity which the combined efforts of the Department and the Committee will discover toward attaining the highest function for which the Department of Health was organized; namely, to enhance the welfare of the people, to protect the public health and to prevent ignorant and incompetent persons from obtaining licenses to practice medicine in Missouri.

THE PHYSICIAN AND EMERGENCY RELIEF

On page 507 in this issue is published the rules and regulations of the Federal Emergency Relief Administration. We can do no better than to publish the editorial comment from the *Journal of the American Medical Association* on this subject. The comment follows:

According to a rule promulgated, June 23, by the Federal Emergency Relief Administration, state emergency relief administrators must provide adequate medical service for persons on relief rolls. The administration has now issued rules . . . showing how this is to be done. Money granted to the states from the Federal Emergency Relief Fund may be used to pay for medical services and supplies for patients in their homes. All hospital expenses must be paid for from state or local funds. Federal money is not to be used to support existing medical, dental and nursing relief services but only to augment those services. State and local relief agencies are expected to operate through agreements with the organized medical, dental and nursing professions, state and local. Within legal and economic limitations, the traditional relations between patients and their physicians, dentists and nurses are to be maintained. Professional services rendered patients on relief rolls must be of the same type as those rendered private patients and are to be paid for at agreed rates, due allowance being made for the conservation of relief funds. The common aim, as stated by the administration, is the provision of good medical service at low cost, to the benefit of the indigent patient and the physician, nurse, dentist and taxpayer. It is hoped that physicians will enter heartily into the spirit of these rules and join with the Federal, state and local relief agencies in making them effective.

County societies and members are requested to study these rules and prepare themselves to cooperate with the local Federal administration for treating in their homes those patients who are on a relief role and agree on the amount to be paid for the service.

DR. M. A. GOLDSTEIN HONORED

In 1932 an anonymous donor presented the sum of \$10,000 to the City of St. Louis with the request that it should be divided into ten annual prizes of \$1,000 each, to be known as The St. Louis Award and to be voted by an impartial committee of selected citizens to the person each year, a resident of metropolitan St. Louis, who had contributed the most outstanding service to bring honor to the community. The award for 1933 was given to Dr. Max A. Goldstein, St. Louis.

The medical profession is highly honored in having one of its members selected for such distinguished recognition. The honor was vested in Dr. Goldstein "in recognition of his achievements and research in dealing with problems of the deaf."

Shortly after graduation from the Missouri Medical College (now Washington University School of Medicine) in 1893, Dr. Goldstein, after serving an internship in St. Louis City Hospital, went to Europe for postgraduate study in otolaryngology. While in Vienna he was inspired by the work of Professor Urbantschitsch who was then engaged in research to salvage hearing remnants in deaf children. To Dr. Goldstein these experimental contacts with deaf children were a revelation and stimulated his altruism and hope that there might be some other service in otology than the clinical technic of mastoid operation, Eustachian catheter inflation, tuning fork tests for hearing, etc.

It was the thought that the knowledge of the otologist if combined in daily routine with the pedagogy of the trained special teacher might improve the educational opportunities of the deaf child and his development to a more independent status by special methods and lip reading that induced Dr. Goldstein to give serious attention to this problem.

At the meeting of the American Academy of Ophthalmology and Otolaryngology, held at the Planters Hotel in St. Louis in 1894, Dr. Goldstein presented a group of deaf children whom he had taught twice a week for a year at St. Joseph's School for the Deaf in St. Louis to demonstrate the progress that had been made in improving their status. The purpose of the demonstration was to acquaint the otologists with the value of the procedure in stimulating latent hearing to a serviceable degree and improving the speech comprehension of such children.

As the result of these early efforts and experiences he organized the Central Institute for the Deaf in 1914 with two teachers and five pupils. By 1916 the Institute had grown to such proportions that a special school building was

found necessary. With the aid of friends and supporters he secured the necessary financial support to erect and equip a special building on Kingshighway and Papin Street. In 1928 further expansion was imperative and the present buildings on the same site are the result. Here he concentrated the activities not only of the otologist and the teacher but also brought into service the experienced psychologist, neuro-anatomist, physicist, endocrinologist and orthodontist—all concentrating on the problems of deafness and defects in speech. The Institute today has in training nearly three hundred pupils in its various departments under the guidance of a staff of thirty-five expert teachers and scientists. It includes in its activities the training of the deaf child in speech and lip reading; a training college for teachers of the deaf, with a high standard of curriculum and linked as an independent unit of Washington University; free clinics for speech correction and deaf prevention; instruction in lip reading for deafened adults, and research laboratories in neuro-anatomy, psychology, acoustics and phonetics.

A word as to what may happen to the rehabilitated deaf child: One congenitally deaf girl, trained at the Institute from her fourth to her fifteenth year, was enrolled in high school in an Indiana town, maintained her scholarship in competition with forty normal hearing pupils and as a senior in that high school today ranks her class in Latin and algebra; another holds a responsible secretarial position in the Hispanic Museum in New York; a third, a totally deaf girl, has been trained as an expert laboratory technician. Pupils trained at Central Institute have graduated from Yale, Chicago, Arkansas and Minnesota universities.

Dr. Goldstein was professor of otolaryngology in Beaumont Hospital Medical College and when this college joined with the Marion-Sims Medical College to form the medical school of St. Louis University, he continued as professor of otolaryngology until 1912. In 1914, he founded Central Institute for the Deaf and has served as its director ever since. In 1896 he established *The Laryngoscope*, an international journal of ear, nose and throat diseases and still continues as its managing editor. In 1922 he created *Oralism and Auralism*, a pedagogic and scientific periodical concerned with the oral aspects of deafness and defects of speech. He has served as otologist and laryngologist to Alexian Brothers Hospital, St. Mary's Infirmary, Mount Saint Rose Hospital, Rebecca Hospital, and is director of the otolaryngological department of the Jewish Hospital.

He was president of the American Academy of Ophthalmology and Otolaryngology in 1902 and of several other societies of national scope in his special field and is a member of practically every organization for the study of deafness and speech defects.

During the World War he served as Major in the Medical Corps of the United States Army, first active in the Department of Rehabilitation of deaf and defective speech soldiers and later chief of head surgery in the cantonment hospital at Camp Dodge, Iowa.

As founder of the St. Louis Art League, chairman of its executive committee and president of this organization, he has contributed much to art interests in St. Louis.

In June, 1933, he was awarded a gold distinguished service medal by the American Laryngological, Rhinological and Otolological Society for his service to the deaf child.

Dr. Goldstein has contributed numerous monographs and original articles to the literature of otolaryngology and in May of this year published his book "Problems of the Deaf," a volume of some 600 pages, in which are recorded his experiences and research in the study of the deaf child during the last forty years. In concluding the preface of his book he writes: "Finally, I wish to acknowledge humbly and reverently that my real inspiration and incentive in writing this book—the thought that has activated the best years of my life—has been '*Help the handicapped child.*'"

NEWS NOTES

Dr. O. Jason Dixon, Kansas City, was a guest of the New York Academy of Medicine on October 18 and delivered an address on "Sinus Thrombosis."

Dr. Julius Frischer, Kansas City, was a guest of the First District (Arkansas) Medical Society at Paragould, Arkansas, October 18. He spoke on "Further Advances in Transurethral Electrosurgery of the Prostate."

Dr. J. L. Myers, Kansas City, was reelected secretary of the ear, nose and throat section of the American Academy of Ophthalmology and Otolaryngology at the thirty-eighth annual session held in Boston, September 18 to 22. Dr. Hal Foster, Kansas City, organized the Academy in Kansas City thirty-eight years ago. Those attending this session from Kansas City were Drs. J. L. Myers, Sam Roberts, Hal Foster, Morris Simpson and Wallace Beil.

Dr. Iago Galdston, New York, will be the guest speaker at the twenty-seventh annual meeting of the Tuberculosis and Health Society of St. Louis, December 6. Dr. Galdston's subject will be "Should All Health Work Be Socialized?"

Drs. C. J. Gissy and L. C. Drews, St. Louis, presented a demonstration of ocular pathology with microprojection before the Ophthalmic Section of the St. Louis Medical Society on November 10 at the Firmin Desloge Hospital. Clinical cases were presented by the ophthalmological staff of St. Louis University School of Medicine. A dinner preceded the meeting.

The Mother's Milk Station in Kansas City was taken over by the Kansas City Department of Health in September. For four and a half years the station has been maintained by the hospital committee of the Woman's City Club of Kansas City. During that time 24,894 ounces of milk have been distributed and 132 babies have been referred by 55 physicians.

Dr. Morris Fishbein, Chicago, editor of the *Journal of the American Medical Association*, was the guest of the St. Louis Medical Society November 28 at a meeting in honor of the past presidents of the Society. Dr. Fishbein delivered an address on "Present Trends in Medical Practice." After the program a reception was held for Dr. Fishbein and the past presidents.

Dr. M. Pinson Neal, Columbia, was the guest at a conference on pathology at Duke University, Durham, North Carolina, on November 13 and delivered an address on "The Small Isolated Hospital's Pathological Problem and Its Solution." Dr. Neal attended the session of the Southern Medical Association as councilor from Missouri at Richmond, Virginia, November 14 to 17.

For several years the St. Louis Better Business Bureau has been attempting to apprehend a Dr. R. M. McCormack. It has been alleged that in many cases he would examine a patient for glasses, collect for them in full and fail to deliver the glasses. He was apprehended in Hannibal on September 18 and taken to New London by the sheriff of Ralls County where the court sentenced him to serve a term of sixty days in jail for receiving money under false pretenses. Sheriffs from a number of counties have warrants for him. Now the Better Business Bureau wants a Dr. Herman and a Dr. Howard who falsely represented themselves as agents for the Better Business Bureau

to make adjustments for the money collected by Dr. McCormack.

The American Association for the Study of Goiter for the fifth year offers an award of \$300 and two honorable mentions for the best essays based upon original research work on any phase of goiter. The work is to be presented at their annual meeting in Cleveland, June 7, 8, 9, 1934. Manuscripts must be submitted to the corresponding secretary, Dr. J. R. Yung, Terre Haute, Indiana, not later than April 1, 1934.

In this issue beginning on advertising page 20 appears the opening installment of a series of articles by Dr. Lee D. Cady, St. Louis. The articles, while a wide departure from the scientific treatises carried in *THE JOURNAL*, have a firm foundation of plot builded on medical ethics and modern trends, good and bad, in the field of medicine. As the plot progresses the reader will have enjoyment not only in the humorous style of presentation but in the manner in which St. Peter and his cohorts dispose of the pet antipathies of the medical profession and the fate of the members themselves in the hereafter.

The one hundredth anniversary of the publication of William Beaumont's "Experiments and Observations on the Gastric Juice and the Physiology of Digestion" was celebrated by the St. Louis Medical Society November 21, Dr. Beaumont's one hundred forty-eighth birthday anniversary. The program consisted of "Biographical Sketch of William Beaumont," by Dr. Major G. Seelig; "William Beaumont's Experiments and Their Present Day Value," by Dr. Joseph Erlanger; "Dr. Beaumont as a St. Louisan," by Dr. Robert E. Schlueter, and "Our Civic and Medical Debt to Beaumont," by Dr. Louis H. Behrens. Photostatic copies of Dr. Beaumont's letters and documents and other historical objects were on exhibit. Many original letters and manuscripts are in the library of the Washington University School of Medicine for the remainder of this year.

The following speakers responded to invitations from the Postgraduate Committee of the State Association to deliver addresses at recent meetings of the component county medical societies:

Drs. Paul A. Gemple and Morris A. Ginsberg, Kansas City, were guests of the Linn County Medical Society at Brookfield November 7. Dr. Gemple spoke on "The Treatment of the Toxemias of Pregnancy," and Dr. Ginsberg spoke on "Coronary Disease."

The Nodaway County Medical Society had as its guests on November 10 Drs. George H. Thiele and J. L. Myers, Kansas City. Dr. Thiele spoke on "The Diagnosis and Treatment of Common Anorectal Disease" and Dr. Myers spoke on "Practical Suggestions on Ear, Nose and Throat Work for the General Practitioner."

On November 23 the Lincoln County Medical Society had as its guests at Winfield Drs. Charles H. Nielson and G. O. Broun, St. Louis. Charles H. Nielson, A. P. Munsch and G. O. Broun, St. Louis. Various phases of pneumonia were discussed.

Drs. Norman Tobias and Julius Rossen, St. Louis, were the guests of the Gasconade-Maries-Osage County Medical Society at Mt. Sterling, November 23. Dr. Tobias spoke on "Extragenital Infection," and Dr. Rossen spoke on "Diarrhea in Infants and Children."

The following articles have been accepted for New and Nonofficial Remedies:

Abbott Laboratories

Capsules Ephedrine Sulphate—Abbott, 3/8 grain

Capsules Ephedrine Sulphate—Abbott, 1/2 grain

Capsules Ephedrine Sulphate—Abbott, 3/4 grain

Solution Ephedrine Sulphate—Abbott, 3%

Lederle Laboratories

Tuberculin "O. T." (Old Tuberculin) 1 c.c. vial package

National Drug Co.

Gas Gangrene Antitoxin Refined and Concentrated

Tetanus-Perfringens Antitoxin, Refined and Concentrated

Erysipelas Antistreptococcus Serum

Tuberculin Serial Dilutions (O-T)—(Human Type)

Schick Test Control

The following product has been included in the List of Articles and Brands Accepted by the Council But Not Described in N. N. R. (New and Nonofficial Remedies, 1933, p. 437):

Merck & Co., Inc.

Guaicol Carbonate—Merck

OBITUARY

HARVEY GILMER MUDD, M.D.

Dr. Harvey Mudd was born in St. Louis in 1857. His father was Henry Thomas Mudd, a man of affairs, his mother, Sarah Elizabeth Hodgen, a sister of the distinguished surgeon,



HARVEY GILMER MUDD
1857-1933
(Strauss photograph)

John T. Hodgen. There were two brothers, Henry H. Mudd and Seeley W. Mudd. The former, who was older, became a distinguished surgeon, the other a distinguished mining engineer. There were two sisters, Fannie, who died after graduation at Monticello, Illinois, the other, Elizabeth, married Dr. Lemen of Denver, Colorado. All the family enjoyed the opportunity of a thorough education. Harvey's family moved to Kirkwood in his second summer because of his health, and he attended school in this cultured suburb of St. Louis, later commuting to the city for his high school work. After graduation from Central High he entered Washington University where he took two years of academic work, leaving there in 1878. His uncle, Dr. Hodgen, was at the zenith of his most distinguished career and his brother, who was engaged in practice with Dr. Hodgen, had already made a name for himself.

As might have been expected Dr. Mudd then entered medicine enrolling in the St. Louis Medical College where his uncle was dean and his brother a professor, and he graduated in 1881 in the first class under the three year cur-

riculum. Some of his classmates were Max Starkloff, Amand Ravold, Willis Hall, James Dickson and Ben Primm, of St. Louis, and William H. James, of Chèster, Illinois. He then entered the St. Louis City Hospital as an intern and also took part of his service at the Female Hospital, which completed the year 1881-1882.

One must revert to the influence of his distinguished uncle, John T. Hodgen, who died in 1882, the year after Harvey Mudd's graduation. It was the practice in those days for medical students to associate themselves with practicing physicians and much of their time was in intimate association, driving about with the physician or helping in the office or hospital with the patients that had to be attended to. An imperishable impression was left by Dr. Hodgen on his nephew who had enjoyed the close association and constant instruction that he received both before and after graduation. The experience which the uncle had gained with fractures during and after the Civil War made him known far and wide and he was called to treat countless cases. Both Henry and Harvey Mudd were skilled in handling fractures and carried on the family tradition with a background of experience rarely obtained even in these days. The busy surgeon before 1880, and no one was busier than Dr. Hodgen, had not long been doing abdominal surgery, so surgery of the extremities and of the surface of the body occupied most of their time, fractures being one of the important fields.

In the St. Louis Medical College he became a demonstrator of anatomy in 1888, then a lecturer on osteology, and later professor of osteology and regional anatomy. He was professor of fractures and dislocations for several years, up to the time of the union of the St. Louis Medical and the Missouri Medical Colleges in 1899, and then he became professor of clinical surgery but after the combination he did less teaching than formerly. When the reorganization of the school took place in 1909 Dr. Mudd remained as professor of clinical surgery, and at his death he was Emeritus in Surgery.

After returning to St. Louis from abroad in 1887, where he had spent two years studying in Vienna, Berlin, Paris, London, and Edinburgh, he started in practice with his brother, Henry Mudd, rising to a position of prominence on sure and certain steps. While they had work all over the city their chief activities were centered about St. Luke's Hospital where the elder brother was chief of staff, and on his death in 1899, Harvey Mudd was elected to this place

which he ably filled for thirty-three years up to his death. St. Luke's Hospital remained throughout his life his chief interest, he being not only chief of staff, but chief surgeon and a member of the board of directors. His constant interest and careful direction were responsible for the fine development of the institution. With the small but able staff, made up of such names as Gustav Baumgarten, Washington Fischel, John Green, Frank Fry, which looked after the old hospital on 19th and Washington, he laid plans for the new institution and selected young men to augment the staff which took charge of the larger plant on Belt and Delmar. St. Luke's showed his influence in every department and whatever success it has obtained is largely due to his cooperation. There was no activity in the hospital that he didn't have a voice in. Here he did most of his surgery, and it was in the practice of surgery that he made his greatest name.

He had a keen ability at diagnosis and a training in clinical medicine and surgery that made him a most helpful consultant. He came to a decision after carefully considering all the detailed information, his judgment was mature, and if an operation was demanded he acted promptly. People had such confidence in him that his advice was almost universally accepted. If he operated he did it with skill and precision, and boldly if need be. He was among the first to do extensive breast operations and his fine results gave him a large clientele in this class of cases. In abdominal surgery he had his greatest successes, and he carefully followed the advances in this field so that he was always among the leaders. It is hardly fair to stress any branch of surgery as his special favorite because he was essentially a general surgeon, taking as much pride in the excellence of his thyroid work as he had satisfaction from his skill in handling fractures, particularly those about the hip and thigh, where he could use better than anyone else the Hodgen splint that he had learned so well how to apply from his inventor uncle, Dr. Hodgen. He gave considerable attention to genito-urinary surgery in the earlier days of this specialty and was a member of the Association of Genito-Urinary Surgeons of America from the year 1899, and its president in 1908. He was a member of the American Surgical Association and its vice president in 1920. He took a keen interest in the St. Louis Surgical Society from 1903 until his death. He also had membership in numerous scientific societies, the St. Louis Academy of Science, the Archaeologic Institute, the International Surgical Association, the Society of Physico Chim de Palermo.

He was an active supporter of the St. Louis Medical Library from its inception up to the time it was taken over by the St. Louis Medical Society. He was also a member of the College of Surgeons.

In 1892 Dr. Mudd and Miss Margaret de la Plaux Clark were married. The son, Stuart Mudd, was born in 1893. He now lives in Philadelphia where he is associate professor of experimental pathology in the University of Pennsylvania, having made a distinguished name for himself in the field of biochemistry and biophysics. Mrs. Mudd and Dr. Stuart Mudd were with Dr. Mudd when he died in Boston, after a prostate operation, on August 16, 1933.

Few men started their practice with the advantages that Harvey Mudd had, and few careers have fulfilled the promises of their auspicious beginnings better than did his. Under the fortunate aegis of his family tradition, and endowed with a physique that made it possible to labor endlessly, his alert acquisitive mind gathered knowledge and experience, and his fine personality made him sought for and developed in his patients a devotion that was an adulation. His spirit was that of a youth; it never grew old. He enjoyed people, if they were his friends, with a zest that is rarely equaled, and it is easy to understand why since his death one man wrote, "He was a wonderful man, full of human sympathy and loved by more people than any other man in St. Louis."

He was passionately fond of the outdoors, taking part in hunting expeditions with the keenest zest. He was an excellent shot both with a rifle and shotgun. Until his later years he had enjoyed a dog and gun in a quail field as much as anyone, but after he quit this form of sport he made regular trips to the duck marshes. His love for the country urged him to get a small place in the foothills of the Ozarks where he could raise turkeys and guinea fowls and some wild birds, a bird sanctuary in fact, and here he spent much of his spare time in the last few years. He had a great fondness for music and in his later years was a regular attendant at the symphony concerts, though he equally enjoyed the less classical forms of music. At his own home he was seen at his best, an ideal husband, parent and friend, always seeking to advance the pleasure of those dear to him, and his fun of good stories, always kindly, made him welcome and spread sunshine wherever he went. As President Williams of Missouri University wrote, "He was a credit to his City, his State, and to his Country."

M. B. C.

JOHN CLARK BOWMAN, M.D.

Dr. John C. Bowman, Cameron, a graduate of Washington University School of Medicine, 1906, died at his home April 2 of heart disease, aged 61 years.

Dr. Bowman was born at Brashear. He began his practice in Cameron and remained in active practice there until his death. He was prominent as a physician and was known in his community as a man of character and high principles. He was a Mason, a member of the Cameron Rotary Club and an active member of the Baptist Church. He was a loyal supporter of organized medicine.

He is survived by his father, one sister and two sons.

OSCAR M. C. CHAMBERLAIN, M.D.

Dr. O. M. C. Chamberlain, Rockport, a graduate of Ensworth Medical College, 1904, died suddenly at his home August 14 of heart disease. He was 52 years old.

Dr. Chamberlain was a lifelong resident of Atchison County. He was born in Rockport and grew to young manhood in that vicinity receiving his early education in the Rockport schools. After completing his medical education he returned to Rockport where he practiced his profession continuously the remainder of his life.

He was an active member of organized medicine, a member of the Atchison County Medical Society and a fellow of the American Medical Association. He was a well known physician in his community and had a large practice throughout the country. As a citizen of Rockport he was one of its most congenial residents, generally looked upon as its official welcomer to all strangers. He was allied with all progressive movements in his community and in the county throughout his active career. He was mayor of Rockport for two terms, filling that important office with credit to himself and to the city.

He is survived by his widow, Mrs. Mary Chamberlain, one son, one daughter and his mother.

WILLIAM WALLACE GRAY, M.D.

Dr. William W. Gray, St. Joseph, a graduate of Ensworth Medical College, 1904, died October 7, 1933, at his home following a stroke of paralysis, aged 61 years.

Dr. Gray was born near Garrettsburg in Buchanan County. After completing his medical studies he began practice in St. Joseph. For six years he was city health officer.

He was active in organized medicine and was interested in Masonic work and in politics and had drawn many friends from these fields.

He is survived by his widow, Mrs. Lucy Gray, three sisters and three brothers.

JAMES ROBERT DAVIS, M.D.

Dr. James R. Davis, Noble, a graduate of St. Louis University School of Medicine, 1905, died of complications following paralysis, September 7, aged 77 years.

Dr. Davis was born at Noble and returned there after completing his medical studies and devoted his entire life to his practice in his own community which is over twenty-five miles from a railroad. He had been a faithful member of the Wright-Douglas County Medical Society since 1914 and an honor member since 1927 when his health failed and he retired from active practice.

He was a man highly respected by all who knew him and will be sadly missed by his colleagues and his many friends.

HORACE G. HARVEY, M.D.

Dr. Horace G. Harvey, Denver, Colorado, was born and reared in Saline County, Missouri, and received his early education in Marshall, and his Master of Arts degree from Central College, Fayette, in 1883. He located in Denver and had builded a lucrative practice in that city and for a number of years was a lecturer in the medical college. I have known Dr. Harvey from boyhood when I lived in Saline County. Later we were classmates and graduated from Central College and from the Missouri Medical College together.

I visited Dr. Harvey some years ago and accepted an invitation to visit one of Denver's leading hospitals and witness a difficult operation. Upon entering I was introduced to the surgeon in charge and some eight other physicians and to my surprise I learned that the operating surgeon and six of the eight physicians present were from Missouri and graduates of Missouri medical schools.

My last meeting with Dr. Harvey was in a class reunion in the Jefferson Hotel, St. Louis, given by the alumni of Washington University School of Medicine. Of the large class of 1887 there were six representatives present. The class of 1883 carries much of historical value for Central College and the class of 1887 has representatives that have extended around the world. My tribute to Horace G. Harvey is that a finer, cleaner or better man never lived.

C. S. AUSTIN, M.D.

SOCIETY PROCEEDINGS

COUNTY SOCIETY HONOR ROLL FOR 1933

(UNDER THIS HEAD WE LIST SOCIETIES WHICH
HAVE PAID DUES FOR ALL THEIR MEMBERS)

HONOR ROLL

Mercer County Medical Society, December 10, 1932.
Moniteau County Medical Society, January 13, 1933.
Ste. Genevieve County Medical Society, January 19, 1933.
Camden County Medical Society, January 20, 1933.
Dent County Medical Society, February 1, 1933.
Chariton County Medical Society, February 10, 1933.
Webster County Medical Society, July 8, 1933.
Benton County Medical Society, August 1, 1933.

BATES COUNTY MEDICAL SOCIETY

The Bates County Medical Society met at the courthouse in Butler, November 16, with Dr. R. E. Crabtree, Butler, president, in the chair.

Members present were Drs. C. W. Luter, C. A. Lusk, and G. A. Delameter, Butler; H. A. Rhodes, Foster; J. M. Smith, Amoret; E. E. Robinson, Adrian, and R. H. Smith, Rich Hill. Visitors present were Drs. C. C. Conover and John Deweese, Kansas City; M. P. Overholser and J. S. Triplett, Harrisonville; B. O. Hartwell, Drexel; J. T. Hornback and E. H. Liston, Nevada, and R. J. Smith, Appleton City.

The following officers were elected: President, Dr. G. A. Delameter, Butler; secretary-treasurer, Dr. R. H. Smith, Rich Hill.

Dr. A. B. Freeman, Rockville, was elected an honor member by the unanimous vote of the Society.

The question of meetings was discussed and it was temporarily agreed that our Society should meet every two months, alternating with Vernon-Cedar County Medical Society. In this way it will be possible for all to attend a meeting each month.

A questionnaire relative to the care of indigent persons in Bates County was answered. The Federal Emergency Relief Administration problem was discussed but no action was taken as further information was desired before proceeding.

The guest speakers of the evening were Drs. Conover and Deweese. They ably presented "The Spastic and Irritable Colon and Its Causes," which was also illustrated with lantern slides. A general discussion followed.

A vote of thanks was extended the visitors for the excellent presentation.

R. H. SMITH, M.D., Secretary.

BUCHANAN COUNTY MEDICAL SOCIETY

The regular business meeting of the Buchanan County Medical Society was called to order in the Missouri Methodist Hospital, October 18.

Drs. Mark L. Underwood and Clifton Smith were unanimously elected to provisional membership.

Transfer cards were read from Dr. Freund, of the St. Louis Medical Society, and Dr. Waller, of the Riley County (Kansas) Medical Society. By vote these cards were turned over to the board of censors.

The vote on accepting the report of the committee to make recommendations on the reduction of local dues, was 9 for and 14 against.

The necrological committee reported as follows:

Once again a brother physician has completed his work. He was active in his profession until his death and loyal to organized medicine. He served six years as city health officer. Therefore be it

Resolved, That in the death of Dr. W. W. Gray the medical profession has lost a useful and honored member and his family a loving and indulgent husband and his patients an upright, sympathetic and helpful doctor. Be it further

Resolved, That we will ever bear in grateful remembrance those true medical virtues, a square deal to the sick to which Dr. Gray so tenaciously clung. Be it further

Resolved, That a copy of these resolutions be spread on the minutes of our records and also sent to the family of our deceased brother.

The resolution was signed by Drs. J. T. Stamey, Charles G. Geiger and L. H. Fuson.

A letter was read from Dr. Charles Wood Fassett, of California, telling of the sickness and death of his wife. By vote the secretary was instructed to write a letter expressing the sympathy of this Society to Dr. Fassett and to place his name on the mailing list of the *Bulletin*.

Dr. Leroi Beck moved, which was duly seconded and carried, that the president appoint a committee to arrange for a complimentary dinner to be given Dr. J. F. Owens who is leaving the city November 1. The president appointed the following members to serve on this committee: Drs. Daniel Morton, John I. Byrne and Leroi Beck.

Meeting of November 1

The regular scientific session of the Society was held at the Missouri Methodist Hospital, November 1.

A communication was read from Dr. Charles Wood Fassett, Burlingame, California, thanking the Society for their expression of sympathy to him in the death of his wife.

A letter was read from Mrs. W. W. Gray acknowledging with sincere thanks the kind expression of sympathy from this Society to her in the death of her husband.

The necrological committee reported the death of Dr. Benjamin Wesley Toothaker on August 4 and passed a resolution that the Buchanan County Medical Society deeply regretted the death of this brother physician and extended to his family and his friends deepest sympathy. A copy of the resolution was sent to the family and spread on the minutes of the Society. The resolution was signed by Drs. J. T. Stamey, Charles Geiger and L. H. Fuson.

The scientific program consisted of an address by Dr. Clarence A. Good on "Epidemic Encephalitis." In a scientific manner the speaker went into the history, etiology, pathology, symptomatology and treatment of the disease. The address was listened to attentively by all and was considered one of the best we had heard on this subject.

The address was discussed by Drs. W. T. Elam, W. D. Webb, Reinhold Willman and Cabray Wortley, closed by Dr. Good.

EMMETT F. COOK, M.D., Secretary.

CLAY COUNTY MEDICAL SOCIETY

The Halloween meeting at the Snapp Hotel in Excelsior Springs, October 26, was one of the best in the history of the Society. Thirty-five members, wives and guests were present for a turkey dinner at 6:30 p. m. Dr. Spence Redman, Platte City, our beloved Councilor, was present.

Three members who together have put in 154 years in the honorable practice of medicine were honored at this meeting. They were Dr. John H. Rothwell, Liberty; Dr. W. C. Hamilton, Kearney, and Dr. John W. Epler, Kearney. Dr. Hamilton was unable to be present.

The program consisted of round table talks. Dr. C. H. Suddarth, Excelsior Springs, presided as toastmaster in his happiest vein. Dr. Redman spoke as is his custom, fraternally and encouragingly. Dr. F. H. Matthews, Liberty, responded to the toast "Our Dr. Rothwell." Dr. Matthews paid fine neighborly tribute saying "I never knew Dr. Rothwell to willingly permit his name to appear in print, connected with any of his work." Dr. Rothwell responded in a most fitting acknowledgment. His address has appeared since in at least one metropolitan paper.

Dr. R. E. Sevier, Liberty, president of the Society, in a well rounded and happy address, introduced Dr. Epler. Dr. Sevier, himself getting along in years, paid tribute to the old-time doctor and his work. Dr. Epler gave a timely talk and was roundly applauded. Both Dr. Rothwell and Epler are actively engaged in practice, drive their own cars everywhere, day or night, after more than fifty years of service.

Dr. J. J. Gaines, Excelsior Springs, spoke of the Hamiltons, one of whom officiated at his birth. "The doctor rode fifteen miles on a cold January night—it was no wonder I got there first." The Society instructed the secretary to write Dr. Hamilton a letter of cheer and congratulation.

A notable occurrence was that the three secretaries, Drs. Rothwell, Matthews and Gaines who have served this Society ever since the Civil War, were all present at this meeting.

Dr. Clinton K. Smith, Kansas City, addressed the scientific section on "Up-To-Date Treatment of the Enlarged Prostate With Electricity." The doctor left nothing unsaid in favor of the electrical method of treatment, giving first, freedom from danger of slough or hemorrhage in competent hands; second, its availability in all cases giving at least symptomatic relief in cases on the malignancy border-line as so many are, and third, freedom from shock. Dr. Smith is fortified in his position by ample experience.

A vote of thanks was tendered Dr. Smith for his very able presentation.

Several young members were present at this meeting.

The next regular meeting will be in Liberty at the year's end when officers will be elected.

J. J. GAINES, M.D., Secretary.

COLE COUNTY MEDICAL SOCIETY

The Cole County Medical Society held its annual fall clinic at St. Mary's Hospital in Jefferson City, October 26.

The following program was presented: "Otalgia," by Dr. Stanley P. Howard. "Acidosis," by Dr. J. A. Ossman.

Symposium on Inflammation of the Female Pelvis: "The Technic of the Management of Labor to Pre-

vent Infections," by Dr. Richard P. Dorris. "The Technic of the Management of Abortion Both Spontaneous and Induced," by Dr. Thomas J. Kelly. "The Nonoperative Treatment of Pelvic Inflammatory Diseases; Specific and Nonspecific," by Dr. Edward E. Mansur. "The Operative Treatment of Pelvic Inflammation," by Dr. W. A. Clark.

Open discussion on all papers.

A luncheon was served at St. Mary's Hospital at 7 p. m.

In the evening Dr. Andrew B. Jones, St. Louis, delivered an address on "Neurosis and Mild Psychosis; Their Recognition and Management."

There was a good attendance from Cole and neighboring counties.

JAMES A. HILL, M.D., Secretary.

GREENE COUNTY MEDICAL SOCIETY

The Greene County Medical Society met September 8 in the public library at Springfield with the president, Dr. J. H. Fulbright, Springfield, in the chair.

The following members were present: Drs. C. B. Elkins, M. C. Stone, W. P. Patterson, J. W. Love, T. O. Klingner, S. L. Freeman, Arthur Knabb, P. O. Upshaw, W. C. Cheek, George W. Hogeboom, J. H. Kelly, Jr., F. A. Harrison, Ronald F. Elkins, J. H. Fulbright and J. N. Wakeman, Springfield. Drs. Kolb, Felix, Rogers and Fossey from the staff of the Federal Hospital were visitors.

The scientific program consisted of an operative case of the transplantation of facial nerve following facial paralysis reported by Dr. T. O. Klingner.

Dr. Donald Elkins presented a well prepared paper on "The Causative Factors in the Reaction Following Intravenous Dextrose Therapy." He stressed that reactions are usually traceable to impure solutions and for that reason only freshly prepared double distilled water should be used.

After a general discussion the meeting adjourned to meet September 22.

Meeting of September 22

The Society met in the public library with the president, Dr. J. H. Fulbright, Springfield, in the chair.

Drs. H. L. Kerr, Crane, and R. D. Cowan, Aurora, were visitors. Attendance was twenty-one.

The scientific program consisted of an interesting and constructive talk on "Ocular Complications of Vascular Hypertension," illustrated by lantern slides by Dr. Wm. James, St. Louis. The paper was discussed by Drs. W. C. Cheek and T. O. Klingner, Springfield.

Meeting of October 13

The Society met in the public library with the president presiding. Attendance was thirty.

Dr. Fred R. Farthing, Springfield, presented an interesting paper on "Endometrial Hyperplasia."

After a general discussion the meeting adjourned.

J. NEWTON WAKEMAN, M.D., Secretary.

JASPER COUNTY MEDICAL SOCIETY

The Jasper County Medical Society was host to a group of members of the Sebastian County (Arkansas) Medical Society from Fort Smith, at a dinner meeting held in the Connor Hotel, Joplin, October 17.

After the dinner the members and guests met in the Gold Room of the hotel where the scientific pro-

gram was presented by the members of the Sebastian County Medical Society.

The meeting was called to order by the president, Dr. M. O. Coombs, Joplin, and the meeting was immediately turned over to the visitors.

Dr. I. Fulton Jones, Fort Smith, took charge and after the visitors were introduced the following program was presented:

"Differential Diagnosis of Coma," written by Dr. J. W. Amis and read by Dr. W. R. Brooksher. Discussion was opened by Dr. O. T. Blanke, Joplin. Dr. L. W. Baxter, Joplin, discussed the paper from the standpoint of anemic coma.

"Surgical Treatment of Tuberculosis," by Dr. F. H. Krock. Discussion was opened by Dr. W. M. Kinney, Carthage.

"Diagnosis and Treatment of Cranial Injuries," by Dr. A. F. Hoge. Discussion opened by Dr. A. M. Gregg, Joplin.

There were thirty-two members and several visitors present.

Meeting of October 24

The Society was called to order by Dr. E. D. James, Joplin, vice president, in the absence of the president.

Dr. R. M. James, Joplin, reported four cases of pellagra seen at the free city clinic.

The program of the evening was presented by Dr. H. D. McGaughey, Joplin. The first case was a demonstration of a roentgenogram of a traumatic right diaphragmatic hernia. Dr. R. I. DeTar, Joplin, gave the history of this case as follows: A large woman riding in the back seat of a small car was thrown to the top of the car then fell between the seats. Had pain in the right chest and roentgenogram showed a break in the diaphragm. Progress of the patient will be reported at a later meeting.

Dr. McGaughey presented a case of left traumatic diaphragmatic hernia in comparison with the above case. History of this case was given by Dr. R. L. Neff, Joplin, as a man with dislocation of sacrum anteriorly from under the fifth lumbar vertebra. The case was discussed by Dr. S. A. Grantham, Joplin, who showed several cases of the usual deformity, anterior displacement of the fifth lumbar vertebra on the sacrum. Dr. J. W. Barson, Joplin, discussed the diaphragmatic hernia.

Meeting of November 7

The meeting was called to order at 8:10 p. m., November 7.

A communication from Wyandotte County (Kansas) Medical Society was read inviting members of our Society to a meeting on November 10 to hear Dr. R. G. Leland, Director of the Bureau of Medical Economics. The president appointed Dr. B. E. DeTar and Dr. L. W. Baxter representatives to go at our expense.

On motion duly seconded and carried the chair appointed a special committee to arrange for a program to be presented at Fort Smith, Arkansas, in the near future.

An interesting case was reported by Dr. Lloyd B. Clinton, Carthage. An intra-uterine fibroid protruding from the cervix that had undergone necrosis appeared six weeks following normal delivery of a normal pregnancy.

The paper of the evening "Acrodynia" was presented by Dr. J. W. Hardy, Joplin. It was discussed by Drs. W. L. Post, Frances Rosenthal, J. W. Barson, and Lloyd B. Clinton. Discussion closed by Dr. Hardy.

Meeting of November 14

Twenty-three were present at the meeting of November 14.

A communication was read from the Missouri State Sanitarium at Mount Vernon announcing a meeting on November 28 at which Dr. Dudley A. Robnett, Columbia, will give a paper on "The Early Diagnosis of Skin Cancer."

A communication from Dr. E. J. Goodwin was read concerning the Federal Emergency Relief Administration with a questionnaire. It was moved and seconded that the president and secretary fill in the questionnaire for the Society and report to the Society at the next meeting. Motion carried.

A case of periodic convulsion in a young girl, 10½ years old, was reported. The attacks have occurred at monthly intervals, with exception of one month, for the last four months preceded by abdominal pain. The case was discussed by Dr. W. S. Loveland and Dr. J. W. Barson, Joplin.

Dr. W. M. Kinney, Carthage, presented a paper on "The Interpretation of the Normal Chest Roentgenogram." Several plates were shown of lungs which had been removed at postmortem and the bronchi and blood vessels injected to show the location and pattern of the normal markings of the chest. These were compared with other plates of lungs in vivo, both normal and pathological. Discussion by Dr. H. D. McGaughey, Joplin, and Dr. J. E. Douglass, Webb City, closed by Dr. Kinney.

PAUL W. WALKER, M.D., Secretary.

MILLER COUNTY MEDICAL SOCIETY

The Miller County Medical Society met at Dr. W. L. Allee's lodge on the Lake of the Ozarks, October 29.

The meeting was called to order by Dr. George W. Duncan, Iberia. Dr. E. C. Shelton, Eldon, was elected temporary secretary, the office being vacant due to the death of Dr. W. A. Von Gremp, Iberia.

Dr. Lynn Garner, state deputy health commissioner, read an enlightening paper on "Epidemic Encephalitis."

Dr. E. C. Shelton gave an interesting talk on "Tularemia."

Five names were presented for membership: Drs. Garner, Suggett, Shelton, Shirley and Parrish. They were duly elected.

Officers for the year were elected as follows: President, Dr. G. D. Walker, Eldon; secretary, Dr. E. O. Shelton, Eldon; treasurer, Dr. D. H. Kouns, Tuscumbia; delegate, Dr. Geo. W. Duncan, Iberia.

Dr. Walker spoke with enthusiasm about the future of the Society. He and Dr. Kouns were charter members helping to organize the Society in 1894. Dr. Walker expressed the hope that meetings be held with more regularity and more papers be read.

Following the regular meeting an enjoyable hour was held with the Woman's Auxiliary.

E. C. SHELTON, M.D., Secretary pro tem.

NODAWAY COUNTY MEDICAL SOCIETY

The Nodaway County Medical Society met in the Lewis Cafe, Maryville, October 13. The meeting was called to order by the president, Dr. Robert C. Person, Maryville, at 6 p. m.

Members present were Drs. Charles T. Bell, Hiram Day, Leslie E. Dean, Loren E. Egley, W. Raymond Jackson, Robert C. Person and Wm. M. Wallis, Jr.,

of Maryville, and Dr. Charles D. Humberd, Barnard. Guests present were Drs. Paul F. Stookey and E. T. Gibson, Kansas City; Dr. M. A. Mulvanae, Fairfax; Dr. B. F. Byland, Burlington Junction; Dr. Ed. Miller, dentist, Hopkins, and Drs. Earl Braniger, Jesse Miller and H. L. Stinson, dentists, of Maryville.

Dr. Charles T. Bell offered a resolution that Chapter II, Section 2, of the Society's by-laws be amended to read: "The regular meetings of the Nodaway County Medical Society shall be held on the first Wednesday of each calendar month and the meetings shall be called to order at 7:45 p. m." Dr. Bell moved that the resolution be accepted for the Society's action at the next regular meeting. The motion was seconded by Dr. Humberd and carried.

The scientific program for the evening was furnished by the guests from Kansas City who came as essayists through the courtesy of the Postgraduate Committee of the Missouri State Medical Association.

Dr. Stookey spoke on "The Epidemiology of Encephalitis," giving the history of past and present epidemics of this disease, the pathological findings and the current views concerning its etiology.

Dr. Gibson gave "The Neurological Findings in Encephalitis" and brought out the many factors concerned with diagnosis.

These papers were discussed by Drs. Bell, Mulvanae, Jackson, Wallis and Byland.

Meeting of November 10

The Nodaway County Medical Society was called to order by the president, Dr. Robert C. Person, Maryville, at the St. Francis Hospital, Maryville, November 10 at 7:45 p. m. Members present were: Drs. B. F. Byland, Burlington Junction; Eugene Crowson, Pickering; Charles D. Humberd, Barnard; J. M. Broyles, Conception Junction; C. T. Bell, K. C. Cummins, Hiram Day, L. E. Dean, Loren Egle, C. V. Martin, R. C. Person and Wm. Wallis, Jr., Maryville. Guests present were Drs. J. L. Myers and George H. Thiele, Kansas City; M. A. Mulvanae, Fairfax; Wm. R. Jackson, Maryville, and Drs. Earl Braniger, Jesse Miller and H. L. Stinson, dentists, Maryville, and three Sisters from the hospital staff.

Drs. Bell, Dean and Jackson were appointed a committee to express in resolution the loss which the profession sustained November 9 in the death of Dr. Claude P. Fryer.

The secretary reread the motion made by Dr. Bell at the last meeting that the by-laws be amended in regard to the meeting time. Dr. Wallis moved the amendment be adopted, seconded and carried.

Dr. Dean read the resolutions on the death of Dr. Fryer; these were adopted.

The secretary distributed sample copies of "Venereal Disease Information," from the Surgeon General of the United States Public Health Service.

The scientific program was furnished by the Kansas City guests who had come through the courtesy of the Postgraduate Committee of the State Association.

Dr. Myers spoke on "Practical Suggestions for the General Practitioner on Ear, Nose and Throat Work," and illustrated his lecture with blackboard sketches. His subject included myringotomy with remarks on examination and technic, sterilization of the field, complications which may arise after paracentesis, foreign bodies in the external auditory canal, impacted cerumen, Aspergillus infestations in which Dr. Myers recommends treatment with both 1 per cent to 10 per cent chloretone and 7½ grains of salicylic acid to the ounce of 85 per cent alcohol ap-

plied twice daily for a month, and preoperative measures in tonsillectomy.

Dr. Thiele spoke on "The Diagnosis and Treatment of Anorectal Disease," and also showed blackboard sketches and lantern slides. His topic took in the broad field of hemorrhoids, fissures and fistulas.

Dr. Bell spoke briefly in recommendation of a blanket plan of group malpractice insurance.

CHARLES D. HUMBERD, M.D., Secretary.

SCHUYLER COUNTY MEDICAL SOCIETY

The Schuyler County Medical Society met in regular session at the office of Dr. Ida M. Nulton, Lancaster, October 17. The meeting was called to order by the president, Dr. Nulton, at 2 o'clock.

The following officers were elected for the ensuing year: President, Dr. Ida M. Nulton, Lancaster; vice president, Dr. J. H. Keller, Lancaster, and secretary-treasurer, Dr. J. B. Bridges, Downing.

The local dues of the Society were remitted.

The matter of the Society consolidating with the Adair County Medical Society was discussed and the president ordered the secretary to communicate with the State Association and ascertain what steps to take.

Dr. Nulton read a paper on "Spina Bifida" and presented a clinic which was very interesting and was discussed by the members.

Dr. Bridges read a paper on "Nephrolithiasis" and presented a case, an infant 16 months of age who had passed two stones the size of a medium-sized pea. It was interesting in as much as such cases are rare. It was discussed by the members.

J. B. BRIDGES, M.D., Secretary.

WOMAN'S AUXILIARY

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

12th Annual Meeting, Cleveland, June 11-15, 1934

President, Mrs. James Blake, Hopkins, Minnesota.

President-Elect, Mrs. Robert W. Tomlinson, Wilmington, Delaware.

WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION

10th Annual Meeting, St. Joseph, May 8, 9, 1934

President, Mrs. Hudson Talbott, St. Louis.

President-Elect, Mrs. William H. Goodson, Liberty.

Advisory Counsel, Dr. J. F. Harrison, Mexico.

NEWS NOTES

Among activities of the Boone County Auxiliary are interesting programs; prizes in the essay contest; furnishing each school library with literature on the subject "What the National, State and Local Governments Are Doing for Health," and garments and money contributed for a needy baby in a neighboring community. At the November meeting Mrs. Edgar Baskett, Columbia, reviewed most acceptably "Anthony Adverse."

The Cass County Auxiliary, again in cooperation with the County Tuberculosis Association, has placed *Hygeia* in all the public schools of the county.

Three public relations meetings have been planned by the Cape Girardeau Auxiliary to which representatives of health organizations will be invited and health talks will be given. An outstanding project approved by the Cape Girardeau County Medical Society is the formation of a speaker's bureau. Under its auspices each member of the auxiliary will give a talk (approved by the medical society) on some health subject when requested by any organization.

A fine public relations meeting on October 20 brought together many representatives of health organizations each of them contributing something of health objectives and achievements. Representatives from the Red Cross, the Cape County Health Association, the public welfare department of the Wednesday Club, and the Parent-Teacher Council reviewed the health-seeking activities of those organizations. At this meeting all members of the Cape Girardeau Auxiliary were present.

The Auxiliary jointly with the Tri-County Medical Society of Gentry, Worth and Harrison counties gave a banquet, October 30, at the New Albany Hotel, Albany, with an attendance of twenty-four persons. After the banquet the auxiliary elected Mrs. J. A. Crockett, Stanberry, president. Other officers and chairmen of committees were distributed among the three counties. The public relations chairman, Mrs. W. T. Martin, Albany, is the state chairman of public welfare in the Missouri Federation of Women's Clubs. In this capacity it is her wise policy to recommend *Hygeia* to the clubs for health-promoting information and material for health programs.

Reports from the Greene County Auxiliary show the national and state news brought to its members and its own activities are well reported locally. The yearbook contains nine valuable monthly programs. At the regular meeting on October 24, Mrs. E. W. Potter reviewed "Angels and Amazons." The Auxiliary gave a tea October 27 honoring the nurses attending the convention of the State Nurses Association held in Springfield at that time. The guest speaker at this convention was Mrs. David S. Long, Harrisonville, now National Public Relations chairman and Missouri program chairman.

Dr. and Mrs. W. L. Allee, Eldon, entertained the Miller County Medical Society and Auxiliary Sunday afternoon, October 29, at their Arrowhead Beach Cottage on the Lake of the Ozarks. After the business and program all enjoyed a boat ride on the lake. A bountiful luncheon concluded this profitable and happy afternoon.

The yearbook of the Linn County Auxiliary embodies all of the suggestions of the state chairman of program and has some additions that are interesting. Among the topics assigned are "Report of the Milwaukee Convention"; "Some High Spots in Fifty Years of Medical Progress"; "Medical Advance as Exhibited at the Century of Progress Exposition"; "The Responsibility of the Nation, State and Community in the Promotion of Health" taken from the report on the "High Cost of Medical Care"; "The Tuberculosis Problem in Missouri" taken from our *STATE JOURNAL*; four programs from the *National Handbook*, and three papers on "The Value of *Hygeia*." Mrs. Ola Putman, Marceline, is president

of the Auxiliary. Mrs. J. R. Davis, Linneus, is program chairman.

Placing *Hygeia* in all the schools of Lafayette County is a fine project the Auxiliary has accomplished. This was done with their own funds and funds received from the sale of Christmas Seals.

The cover of each Auxiliary yearbook carries an emblem made by hand by the president-elect, Mrs. J. W. Lightner, who was recently elected first vice president of the second district Federation of Women's Clubs.

A buffet supper for husbands and guests was given on the evening of November 28.

The Saline County Auxiliary honored its highly esteemed president, Mrs. L. S. James, Blackburn, with a delightful luncheon October 19 at the home of Mrs. W. M. Bickford, Marshall.

At the opening meeting, September 29, of the Auxiliary to the St. Louis Medical Society, the president, Mrs. Kirchner, was assisted in receiving the members by Dr. F. J. V. Krebs, president of the St. Louis Medical Society, and Dr. John W. Stewart, counsel to the Auxiliary. Others assisting Mrs. Kirchner were Mrs. Talbott, state president, and Mrs. Bartlett, past state president, and the past presidents of the St. Louis Auxiliary.

The St. Louis Auxiliary meeting on Friday, November 10, was Public Relations Day with many guests invited to hear the speakers, Miss Mary E. Stebbins on "A Health Tourist Sees Missouri," and Dr. Paul Zentay presenting "The Part Played by the Medical Profession in the Recent Epidemic of Encephalitis."

The St. Louis Medical Society has asked its Auxiliary to provide a social night each month.

MISCELLANY

RULES AND REGULATIONS GOVERNING MEDICAL CARE PROVIDED IN THE HOME TO RECIPIENTS OF UNEMPLOYMENT RELIEF

The Federal Emergency Relief Administration, Washington, D. C., makes available the following statement as a guide to its personnel and to the public:

The following regulations, governing the provision in the home of medical care (includes "medicine, medical supplies and/or medical attendance") to persons eligible for unemployment relief, are hereby established.

1. *Policy*.—A uniform policy with regard to the provision of medical, nursing, and dental care for indigent persons in their homes shall be made the basis of an agreement between the relief administration and the organized medical, nursing, and dental professions, state and/or local. The essence of such a policy should be:

(a) An agreement by the relief administration to recognize within legal and economic limitations the traditional family and family-physician relationship in the authorization of medical care for indigent persons in their homes; the traditional physician-nurse relationship in the authorization of bedside nursing care; the traditional dentist-patient relationship in the authorization of emergency dental care; and

(b) An agreement by the physician, nurse (or nursing organization) and dentist to furnish the same type of service to an indigent person as would be rendered to a private patient, but that such authorized service shall be a minimum consistent with good professional judgment and shall be charged for at an agreed rate which makes due allowance for the conservation of relief funds.

The common aim should be the provision of good medical service at a low cost—to the mutual benefit of indigent patient, physician, nurse, dentist and taxpayer.

The policy adopted shall be to augment and render more adequate facilities already existing in the community for the provision of medical care by the medical, nursing and dental professions to indigent persons. It shall imply continuance in the use of hospitals, clinics and medical, dental and nursing services already established in the community and paid for, in whole or in part, from local and/or state funds in accordance with local statutes or charter provisions. Federal emergency relief funds shall not be used in lieu of local and/or state funds to pay for these established services.

The phrase "in their homes" shall be interpreted to include office service for ambulatory patients, with the understanding that such office service shall not supplant the services of clinics already provided in the community.

2. *Procedure.*—A uniform procedure for authorization of medical, nursing, and dental care in the home shall be established by each state and/or local emergency relief administration. This procedure shall not be in conflict with the following requirements:

(a) *Written Order.*—All authorizations for medical, nursing and dental care shall be issued in writing by the local relief officer, on the regular relief order blank, prior to giving such care; except that telephone authorization shall immediately be followed by such a written order; and provide that authorizations for bedside nursing care shall be based on a recommendation by the attending physician, in cases where a physician is in attendance, who shall certify to the need for nursing service as part of the medical care. Authorizations for medicine and medical supplies shall also be issued in writing and, in general, such authorizations shall not be issued except on written request of the physician authorized to attend the person for whose use they are desired.

(b) *Acute Illness.*—Authorizations for medical care for acute illness shall be limited to a definite period and a maximum expenditure or number of visits (i. e., not more than two weeks or ten visits), according to the standard agreement made between relief officials and physicians under regulation 1. Medical care in excess of this period shall not be authorized until after a reinvestigation of the case in the home by the local emergency relief administration.

(c) *Chronic Illness.*—Medical care for prolonged illnesses, such as chronic asthma, chronic heart disease, chronic rheumatism, diabetes, etc., shall be authorized on an individual basis, and, in general, visits shall be limited in frequency (i. e., not more than one visit per week for a period not exceeding two or three months) by agreement. Nursing care for such chronic illnesses shall, in general, be authorized in accordance with the need for such care as indicated by the attending physician. If necessary, more frequent visits, by the physician or nurse, for an acute attack occurring in the course of a chronic illness, may be authorized. Care for chronic illness author-

ized under this section shall supplement and not supersede existing community services, such as visiting nursing service or institutional care.

(d) *Obstetric Care.*—Authorization for obstetric service in the home shall include an agreed minimum number of prenatal visits (where possible), delivery in the home, and necessary postnatal care. Due caution shall be exercised that this authorization for delivery in the home does not involve undue risk to the patient for whom hospital care may be imperative. The physician authorized to attend the confinement in the home shall be responsible for certifying to the local relief administration that, in his professional judgment, delivery in the home will be safe.

(e) *Special Services.*—Medical and nursing services not covered above shall be authorized on an individual basis, subject to the general provisions of the agreement made under regulation 1. Special dental service shall be subject to a similar procedure.

Medical care shall not ordinarily be authorized by relief administrations for conditions that do not cause acute suffering, interfere with earning capacity, endanger life, or threaten some permanent new handicap that is preventable when medical care is sought.

(f) *Accessory Services.*—Emergency dental care and bedside nursing service, for indigent persons in their homes, may be authorized subject to the existing general policy of the state and/or local relief administration.

(1) Dental care shall, in general, be restricted to emergency extractions and repairs. Dentists and dental care shall be subject to the same general restrictions indicated for physicians under regulation 1.

(2) Bedside nursing care, where authorized, shall conform to a procedure comparable to the one outlined for physicians above, and shall be provided under an agreement made between relief administrations and nursing organizations, state and/or local, under the same principles suggested for physicians under regulation 1. Standards of accredited local nursing organizations shall be followed by nurses giving authorized bedside nursing care to indigent persons in their homes. Such authorized bedside nursing care shall not supersede or supplant existing local official services giving such care under the provisions of local law.

(g) *Fee Schedule.*—The agreement between the state and/or local relief administration and the organized professional groups of physicians, nurses and dentists, state and/or local, established under regulation 1, shall include a fee schedule covering the basic and special services outlined in sections (b) to (f), inclusive, of this regulation. In the interests of simplified accounting it is suggested: That a flat rate be established, on a per visit basis for the usual care given to acute and chronic illness (sections (b) and (c) above), for attendance at confinement (section (d) above), for emergency extractions (section (f) above,) and for a bedside nursing visit (section (f) above); and that all special services (medical, nursing or dental) be covered by an agreed reduction from the usual minimum fee schedule for such services with an agreed maximum fee. A recognized differential in fee shall be established between a home and an office visit. All fees shall be established on the basis of an appreciable reduction from the prevailing minimum charges for similar services in the state and local communities, with due recognition of the certainty, simplicity and promptness of payment that authorization from the local relief administration insures. This schedule shall only apply where the expenditure of federal relief funds is involved and

shall not preclude the payment of additional amounts from local funds.

Where bedside nursing care is authorized, the flat rate per visit shall be established by agreement at not to exceed the certified cost per visit established for accredited visiting nursing organizations in the state or local district.

(h) *Bills*.—Physicians, nurses (or nursing organizations) and dentists who are providing authorized medical care to indigent persons in their homes shall submit to the local relief official, monthly (within ten days after the last day of the calendar month in which such medical care was provided), an itemized bill for each patient. Each bill shall be chronologically arranged and shall contain at least enough information to permit proper audit (i. e., name, age and address of patient; general nature of illness or diagnosis; whether home or office treatment; dates of service; and status of case at end of month—cured, sent to hospital, dead, needs further care, etc.). Bills for medical care shall be accompanied by the original written order for such care, except for cases in which medical service under an authorization has not terminated during the calendar month covered by the bill, in which cases the bill shall show, in addition to the details required above, the date and serial number of the outstanding order. Retroactive authorizations shall not be issued or honored for payment.

Bills for special and accessory services, outlined under sections (c) and (f) above, shall give full details of such services, and bill for medicines and medical supplies, under (i) below, shall be subject to the same general requirements. Bills for drugs shall list the name and quantity of each. The formula and number of each prescription costing more than 25 cents shall be submitted with or made a part of the pharmacist's bill.

NOTE.—The submission of bills and their audit and authorization for payment will be simplified if the state emergency relief administration provides a suitable bill form.

(i) *Medicine and Medical Supplies*.—Physicians providing authorized medical care to indigent persons shall use a formulary which excludes expensive drugs where less expensive drugs can be used with the same therapeutic effect. When expensive medication is considered essential by the authorized attending physician, it may be authorized after consultation with the local medical advisory committee.

Prescriptions for necessary drugs and medicine shall be restricted to the National Formulary or the United States Pharmacopeia. To avoid excessive expenditures for remedies of unknown or doubtful value, proprietary or patent medicines shall not be authorized.

State and/or local relief officials are urged to make trade agreements with pharmaceutical organizations and druggists for uniform or reduced rates for prescriptions.

Authorizations for medical supplies shall be restricted to the simplest emergency needs of the patient consistent with good medical care.

In general, authorizations for medicine and medical supplies shall not be issued except on written request of the physician authorized to attend the person for whose use they are desired.

3. *Authority*.—The state emergency relief administration, responsible for the distribution of federal and state emergency relief funds to local relief administrations, shall give approval to such statements of policy, proposed fee schedules, and detailed pro-

cedures, governing the provision of medical, nursing and dental care in the home to recipients of unemployment relief, as may be established by state and/or local relief administrations, in accordance with the provisions of regulations 1 and 2, above, before such policies, schedules and procedures shall take effect. It shall be the responsibility of the state emergency relief administration to formulate a program of medical, nursing and dental care for indigent persons in their homes, which shall not be in conflict with the provisions of regulations 1 and 2, above, and to make sure, by giving or withholding approval, that analogous programs formulated by local relief administrations shall not be in conflict with such state program.

(a) *State and Local Professional Advisory Committees*.—State and local relief administrations shall request the presidents of the state and local medical, nursing, dental and pharmaceutical organizations, respectively, to designate an existing committee or appoint a special committee, to advise them in the formulation and adoption of adequate programs for medical, nursing and dental care in the home for indigent persons. The relief administrations shall be responsible for the final adoption of such programs. The medical, nursing, dental and pharmaceutical advisory committees can assist these administrations in maintaining proper professional standards and in enlisting the cooperation of the constituent, professional membership in such programs. Local medical, nursing and dental programs submitted to the state relief administration for approval should be submitted to the appropriate professional advisory committee for comment, before final approval is given. The appropriate professional advisory committees should be consulted by relief administrations with regard to disputed problems of medical, nursing and dental policy and practice.

(b) *Licensed Practitioners of Medicine and Related Professions*.—When a program of medical care in the home for indigent persons has been officially adopted, participation shall be open to all physicians licensed to practice medicine in the state, subject to local statutory limitations and the general policy outlined in regulation 1, above. Physicians authorized by relief officials to give medical care under this program shall have accepted, or shall be willing to accept, the regulations and restrictions inherent in such a program. In order to provide adequate medical care it may be desirable for local relief officials to maintain on a district basis a list or file of physicians in the community who have agreed in writing to comply with the officially adopted program. Such a list of physicians should also facilitate a more equitable distribution of orders for medical services.

A similar policy and procedure shall be followed in the preparation of approved lists of nurses, dentists and pharmacists. Licensure and/or registration to practice their respective professions in the state shall be a prerequisite to approval of graduate nurses, dentists and pharmacists for authorized participation in the officially approved state program for the provision of medical care for indigent persons in their homes.

(c) *State Program for Medical Care to Indigent Persons in Their Homes*.—When the state emergency relief administration has adopted a uniform program for medical, nursing and dental care for indigent persons in their homes, in accordance with these rules, a copy of such program, including the statement of policy, fee schedules and detailed procedures, shall be filed immediately with the Federal Emergency Relief Administration.

BOOK REVIEWS

PRACTICAL HEMATOLOGICAL DIAGNOSIS. By O. H. Perry Pepper, M.D., Professor of Clinical Medicine, University of Pennsylvania; Assistant Chief of the Medical Clinic, Hospital of the University of Pennsylvania; and David L. Farley, M.D., Physician to the Pennsylvania Hospital, Philadelphia; and to the Cooper Hospital, Camden, N. J.; Associate in Medicine of the University of Pennsylvania. 562 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1933. Cloth, \$6.00.

This book should be a welcome addition to every doctor's library. Almost every practical question arising within the scope of all hematology is discussed in a lucid but concise manner.

Part I includes the first eight chapters, wherein all the cellular elements of the blood are amply discussed with reference to their origin and development as well as to qualitative and quantitative variations.

In addition to a discussion of the properties and functions of hemoglobin, space is given to description of methods for its quantitative estimation. Also bilirubinemia and its relation to hematological diagnosis is briefly discussed.

In discussing the sedimentation test and its clinical interpretation, its value is acknowledged but its limitations are emphasized.

The white blood cell, perhaps the most interesting element in hematology, is given considerable space and discussed not only in its academic aspects, but also with reference to its practical application in hematological diagnosis. Variations in morphology of the neutrophile nucleus (Schilling counts) and their significance in relation to the blood picture are discussed in some detail. The colored plates showing the various normal and abnormal leukocytes are as faulty as usual.

A most excellent account of the blood platelets with reference to their origin, physical properties, physiology, and normal and abnormal variations with particular reference to the significance of the latter is given in Chapter V.

The chapter on blood groups and the hematological aspects of blood transfusion is well presented. The academic phases, including the principles of blood grouping, etc., are touched upon, but more space is given to the practical aspects of this subject, such as selection of donors, indications for transfusions, etc.

Part II takes up hematological diagnosis of the diseases primarily of the hemopoietic and leukopoietic systems. In this section the hematology of the anemias is quite clearly discussed and presented in an exceedingly understandable way. The differential diagnosis in anemias is discussed with particular reference to etiology. Therapeutic procedure is practically omitted.

The leukemias are well presented and satisfactorily classified. In addition, the atypical leukemias and those very interesting so-called leukemoid blood pictures in response to infections, are very interestingly discussed.

The hematology of purpuras and hemorrhagic diseases is discussed in a rather instructive manner and is presented in tabulation form, obviously with the idea of clarifying the confusion in separating this group of diseases. A separate chapter, in which only the anemias of infancy and childhood are considered, provides additional information.

Of considerable practical importance is Chapter

XIV, wherein the effect of irradiation, splenectomy and certain chemicals on normal and pathological blood pictures is briefly discussed. The therapeutic effect of these agents in various types of anemias, leukemias and purpuras is interesting and instructive.

The clinician will find Part III, which deals with the hematology of diseases not primarily of the blood, of considerable practical advantage, in that the usual type of blood picture found in various conditions, such as actinomycosis, acute yellow atrophy of the liver, Addison's disease, agranulocytic angina, amebic dysentery, granuloma inguinale, mumps, etc., is briefly but interestingly discussed. These conditions are listed alphabetically, beginning with abscess and ending with yaws, yellow fever, and zoster.

The clinician as well as the undergraduate will also appreciate the glossary on hematological terminology which precedes the index. This book is intended to help the clinician with his practical problems in hematology, and in my opinion it fulfills that function as well if not better than any with which I am familiar.

E. T. J.

INJURIES OF THE EYE. Diagnosis and Treatment, Forensic Procedures and Visual Economics. By Harry Vanderbilt Wü r d e m a n n, M.D., Sc.D., F.A.C.S., Colonel, Medical Reserve Corps; Flight Surgeon Air Corps, U. S. Army; Medical Examiner, Aeronautics Branch, U. S. Department of Commerce, Seattle, Washington. Second edition. With 236 illustrations and 10 color plates. St. Louis: The C. V. Mosby Company. 1932. Price \$13.50.

"This book is offered as an exhaustive and authoritative work upon injuries of the eye." The first edition was published in 1911. The present edition follows the general plan of the first with the addition of the many new developments of the intervening years. Part 1 is devoted to general considerations; types of ocular injuries, etiology, mechanism and complications, including operative and medicinal injuries; diagnosis, prognosis and prophylaxis; treatment of the injuries and their sequelae. Part 2 deals with injuries of the special structures of the eye with their infinite variations of kind, extent and complications, and the special methods of treatment and repair. Part 3, on forensic medicine, considers the examination of personal injury cases; the rights and duties of the physician in his capacity as expert witness; the laws in relation to malpractice; compensation laws, pension and accident insurance laws and practices; visual economics, with the methods of determining economic loss from injuries used by the various compensation commissions and insurance companies.

The book fulfills well its ambitious aim to be "exhaustive and authoritative." There are few questions relating to injuries not answered in its pages.

R. J. C.

THE SURGICAL CLINICS OF NORTH AMERICA. (Issued serially one number every other month.) Volume 13, No. 1. Pacific Coast Surgical Association Number—February 1933) 247 pages with 90 illustrations. Per Clinic Year (February 1933 to December 1933), Paper \$12.00; Cloth \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1933.

The February, 1933, issue is the Pacific Coast Surgical Association number. It contains 274 pages being articles contributed by fellows of the Pacific Coast Surgical Association demonstrated by surgeons in the various hospitals on the Pacific Coast.

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